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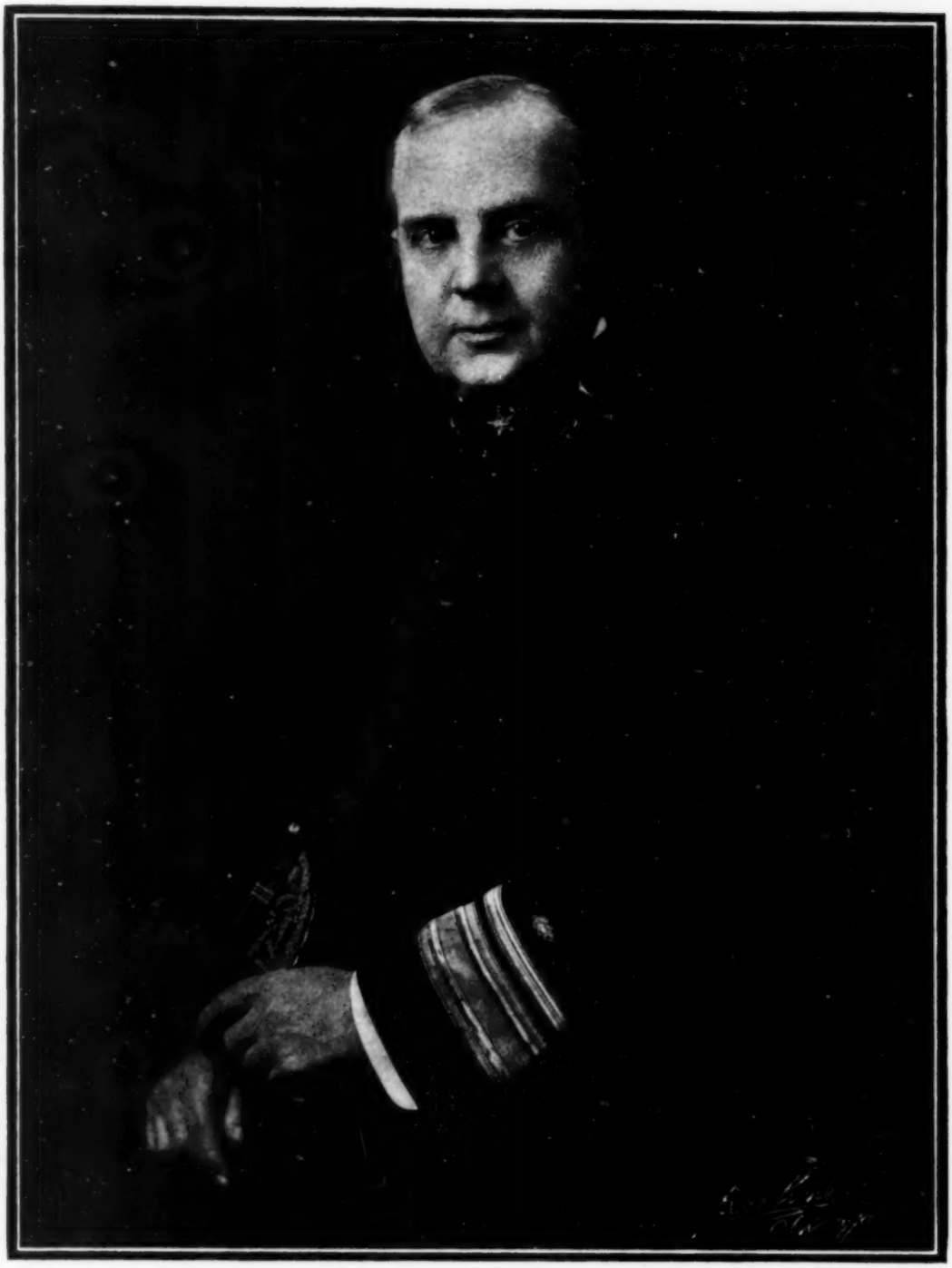

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THE SOMATIC CAUSES OF PSYCHONEUROSES *

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Professor of Nervous Diseases, Cornell University Medical College

NEW YORK

Wandering through a bookshop some months ago, I saw two counters piled up with literature devoted to varieties of psychic experience and elucidation. There were books on new thought, on dreams, on personality, on the disadvantage of being inferior, on pschanalysis (adapted to any intelligence), on psychic research; also on slips of the tongue, Christian science and the life beyond. It showed to me what a tremendous grip the psyche had taken on the unthinking but reading world. I still like the soul and follow its aspirations, but I feel as if the psyche was overworking her job and becoming psychopathic. Perhaps this experience had something to do with the trend of this contribution, which is an effort to show that there is a physical, a neuropathic factor in the causation of the psychoneuroses; also that the psychoneuroses may develop directly from concussions, traumatisms and toxins, and that some constitutional neuropathic condition is necessary for the psyche to work out its mechanisms of defense, readjustment, etc.

THE EMPHASIS PLACED ON PSYCHOGENESIS

The psychoneuroses are the so-called functional troubles which are grouped more specifically under the heads of hysteria, psychasthenia (compulsions, obsessions, fears), neurasthenia and anxiety states. Among these groups, the war neuroses were made up largely of hysterias and anxiety states, while in nontraumatic civil life we find a greater prevalence of psychasthenia and anxiety states.

There has been a tremendous amount of emphasis laid on the psychology and psychogenesis of these affections. The formula that war neuroses, taking them all in all, were nothing more than defense states, namely, the expression of a subconscious desire through awkwardly planned devices to get away from the front, was almost officially promulgated.

On the other hand, among the internists, there has been a large amount of activity of thought and emotion paid to the physical side of these conditions. Autotoxemia and sepsis dominate a field once occupied by malaria, the reflexes and other vague phases of pathogenesis. There is at present a sort of rivalry between the colon and the teeth, on the one hand, and the gonads and the psyche on the other. I do not attach myself to either of these groups, but I find that there are always physical as well as psychic factors in the causation of the psychoneuroses; that pathologic reactions do not occur in anatomically and physiologically sound bodies.

DENIAL OF EXISTENCE OF FUNCTIONAL DISEASES

I do not suppose that any one denies now that there is really no such thing as a functional disease. In all the neuroses and psychoneuroses something material and neural has happened. To say, then, that a disorder is due to emotion or to some prompting of the subconscious or to a suggestion, is not giving the last word of explanation. There is some evidence that we can have no emotion without a previous physical change, and it is definitely known that emotion is always associated with and followed by notable physical changes. The neurotic disorders, such as hemiplegia or monoplegia, which follow an emotion have, one may be sure, also some underlying physical change. It seems to have been lately demonstrated that these physical changes which are usually associated with an emotion may also occur as the result of concusssion or toxemia. In other words, psychoneuroses are not ever entirely psychogenic, but are sometimes somatogenic and sometimes of mixed origin.

Carver and Dinsley [1] state that there is a large group of war neuroses in which the causative factor is not emotional, but commotional. This commotional group of neuroses is composed of three subgroups: (1) one in which there is direct concussion by the missile on the tissues, overlying the nervous system, but no damage to brain, cord or membranes; (2) a subgroup in which there is no direct concussion but the patient is subjected to violent variations of pressure from proximity to the explosion, and (3) a subgroup in which the factor is extremely rapid vibrations which are one of the less known products of the detonation of high explosives. The vibrations are capable of agitating the nervous system in such a way as to produce a condition which clinically closely resembles that produced by emotion.[2]

Carver and Dinsley performed experiments on animals. They established a detonating station, X, and arranged a series of three zones about it. Zone A included the area of direct concussion; Zone B that of indirect concussion, and Zone C, an area in which high explosives detonate only if they have the same tonal standard as the explosion at X. They also experimented with fish and then with rats and mice.

* Read before the New York Neurological Society, Jan. 6, 1920.

1. Carver, Alfred, and Dinsley, A.: Some Biological Effects Due to High Explosives, Brain **42**: 113 (June) 1919.

2. Carver and Dinsley give some interesting facts about explosives. The pressure of high explosives may exceed 300 tons per square inch, and the waves of detonation run through the exploding mass at the rate of 10,000 meters per second. As the result of an explosion, there occur massive vibrations due to compression and decompression, molecular vibrations, and probably finer ethereal vibrations, such as are utilized in wireless telegraphy.

Finally, they made observations on men working in a demolition station and subjected to the effects of detonations but protected from any direct concussion and not subject to any element of fear. They found that in zones B and C fish lost for hours their sense of equilibrium; that in these zones rats and mice showed forms of paralysis and nervous disturbances, from which they eventually recovered, and that in zones B and C some of the men showed marked nervous disturbances.

They conclude that (1) while the neuroses of war may be and are brought on by purely emotional shock, the importance of this has been overestimated; (2) they may be caused also by "purely physical shock" as demonstrated in their experiments, or (3) they may be of mixed origin.

CLINICAL EVIDENCE

Clinical evidence of some physical and physiologic defects in the genesis of many psychoneuroses is very abundant. I have many recorded cases, but I shall refer to only one.

A boy, aged 19, whose family history was good so far as nervous or mental disorders were concerned, whose father died of hemorrhagic pancreatitis, and whose mother and a sister were living and well, when young had been well and normal, good at school and social in his habits, with some musical taste and talent. At the age of 14, while going to school, a boy said to him: "What is that on your ear?" This annoyed him and he felt as if there was something in the ear, and became nervous about it. Next day while going to school, he suddenly felt as if there were a burning torturing fluid in his head and pouring through his body. The sensation lasted only a moment, but immediately afterward he became very nervous, restless and apprehensive. He was afraid especially of having another seizure, etc., and did not dare to go to school. Then he became afraid to go out alone on the street and was in constant apprehension lest something would happen to him. The range of his fears enlarged; he feared he might have tuberculosis or paralysis, or some other disease. He had finally to give up all his school work, and he was placed under a private tutor. Finally he became too nervous to pursue his studies under any conditions.

In the first year of his illness, he had two or three more of these "seizures" followed by increase of nervousness. No attack was as severe as the first, however, and in none of them was there any fainting or twitching or palpitation. His family noted no physical change during the attack, though he thinks he became pale.

When 16 years old, his father secured a farm and put him to work on it. He tried this for a couple of years, but got no better and finally gave it up and came home. He was then 18 years old. One afternoon he went out with his father to see a fire. He used to love to go to fires, but at this one he became frightened and had another seizure. After this he was worse than ever. The sound of fire-bells threw him into hysterical excitement, and he would tremble and cry. He became afraid even of the sound of trolley cars. He could not go out of the house alone, he was afraid to meet people, and was continually running to his mother, telling her his troubles and asking for relief. His father meanwhile had died (which relieves us of considering the so-called Oedipus complex).

During all this time his symptoms were combated by his family and physician, by change of occupation and environment, therapeutic talks, sedative medicines, etc.

He was brought to me a short time after the fire episode, when he was at his worst. He had then been for four years nervous, apprehensive, hysterical and entirely lacking in courage, independence and capacity to concentrate or carry on any kind of study or work.

I was told that his habits were good, and there was no history or evidence of masturbation—a matter closely inquired into. His physician thought he had deficient sexual activity. He slept badly, but he had no fear dreams except once—just after the first attack.

I found him to be an intelligent boy, affectionate, unselfish and very anxious to get well, and tremendously disturbed by his nervous condition. He showed no objective signs of nervous disease, nor any of the stigmas of dementia praecox. His story was not of the schizophrenic type.

The boy was 6 feet, 2 inches in height, but he had no marked pituitary anomaly. He had no signs of thyroidism except a slight tremor of the hands. His hair and teeth were normal. He had not the make-up of status thymolymphaticus; his hands and feet were often cold and blue; he had undue fatigability and indefinite myalgic pains, a constant subnormal temperature and a dry skin. The blood pressure was normal. He was not anemic.

He was placed on 5 grains of thyroid gland twice a day; later, 2 grains twice daily.

Within two weeks after treatment was begun, the boy was rather magically changed. He lost his fears and restlessness, and nervousness and insomnia. He was able to go out alone.

He went back to his farm, worked there daily, motored, and became practically well and continued so for nearly three years. He takes the thyroid intermittently, and if he feels nervous or panicky, he gets relief after using the gland.

Recently I had a letter from him saying he was practically well, though he occasionally got a little nervous and apprehensive.

Nov. 10, 1919, he came to my office and confirmed the foregoing story.

He described again his seizures. Suddenly, without any cause except perhaps some extra excitement, he felt as though a burning, torturing fluid were filling his head and body. He became pale; his hands sweat. The sensation left him at once, and sometimes he immediately felt normal. Then in two or three days, there came on him a condition of nervousness and apprehension, and he passed into a chronic condition of an anxiety neurosis, with restlessness and insomnia, and constant fears of a return of the seizure, or some other disaster.

This patient is not cured, and he may have some recurrence of his condition. I do not infer from this isolated case that psychasthenic conditions are always or even often due to hypothyroidism. I do not know even now that it was hypothyroidism in this case or that there was not other endocrine defects, and that thyroid feeding simply reestablished a balance.

There must have been behind his gland defect some instability of the nervous centers. There always is in these cases. But the case does demonstrate that sometimes a gland defect is present in the psychoses and that no amount of attention paid to mental conflicts, conversions, condensations, complexes, sense of inferiority or any other phases of the psychanalytic and therapeutic effort would be of much use as long as his internal secretions were working defectively.[3]

The facts I have recited I am sure sufficiently emphasize the points I have wished to make and I might end my paper here.

But I would like to say something about the particular physical changes that occur, I believe, in part or in whole in the psychoneuroses.

THE SOMATIC MACHINE

We are told that these disorders are essentially bred by emotion; but from this point on, the method of development of the psychosis is different in accordance with the school of psychology to which one belongs.

We know, but perhaps we do not always realize, how intricate and delicate is the physical machinery

3. Dr. Beverley Tucker has reported three cases similar to the foregoing. Compare also Wechsler, I. S.: Neur. Bull., 1919, No. 2.

connected with emotional states and the mental processes. We know the location in the brain of parts concerned in sensation, perception and memory; we know that the mental machine is made up functionally of many complex minor systems, and that consciousness is associated with the coordinated activity of a large portion of them. We know that the parts hang together by reason of very numerous tenuous threads and delicate contacts.

THE SYNAPSIS

An explanation of certain brain functions has been based on the hypothesis of the activity of the dendrites, and their ameboid movements. This view has been put forth by Mathias Duval and Lépine. It has been supported by Wiederham and half a dozen others. It has been contradicted by the experiments of Azoulay and others. Lugaro has another theory; that of the turgescence and subsidence of the cell body and dendrites. Renaut has a somewhat similar view, and for a time Cajal invoked the movements of neuroglia. Later Cajal argues that new paths of psychic activity may be created by the growth and exercise of the fibrillae and dendritic processes, and weakened by disease and decay of these organs. Sherrington lays especial emphasis on the functional importance of the synapsis.[4]

All these views came to the same point, namely, that the paths of conduction in the brain may be blocked or made more free by physical and mental agencies, and that in the activities of life there are continual shiftings and realinements.

I am going to venture on some speculations connected with these known anatomic facts. There is no reason why theorizing should be confined to psychologic machinists. And, besides, what I advance is not without some laboratory support.

It may be assumed that since the synapsis is a point at which the traveling nerve impulse has to pass over a break in anatomic continuity, it here meets its highest resistance. Some neural phenomena, therefore, might be expected to develop here, just as light or heat develops when an electric current meets a specially great resistance. The synapses of the cerebral cortex are thought to be the seat of consciousness (Macdougal). Whether this is so or not, I only use the term synapsis as symbolic of the fact that there are breakable points and points of variable resistance in the finer organizations of the brain.

The neural basis of disorders of association, such as occur in retardation, and of blocking of thought and of flight of ideas, may be in part explained by this mechanism.

Hysteria is a disease characterized by a dissociation of psychic systems functioning in sensation, perception or thought.

It is probable that the other psychoneuroses, neurasthenia, psychasthenia and the anxiety states, are due to dissociation of systems of neurons.[5]

Recent experiments have given some laboratory proof of this kind of reasoning.

A. R. Moore[6] has shown that strychnin, which greatly increases the reflex excitability of animals with a synaptic nervous system, has no effect on the neuromolecular system of coelenterates which have no synaptic elements. It has a slight influence on echinoderms and a much greater one on crustaceans and mollusks which have more developed nervous systems.

Such a view, namely, the blocking of a functionally similar group of neurons or a decrease in its resistance, seems also to explain therapeutic results. In certain forms of psychasthenia with an underlying fatigue state, strychnin or small doses of opium will in a short time clear the mind and entirely relieve the patient. In some cases of very marked obsessions and anxiety and fears, feeding with pituitary and thyroid extracts promptly changes the whole character of the patients. A young man with an obstinate psychoneurosis was always promptly relieved by the administration of the "panacea" of Antonius Muca, the formula for which I obtained from Galen's works.

The morbid somnolence of dyspituitarism, due perhaps to some synaptic block in the thalmic region, has been relieved by gland feeding (Niles).

We know that the seat of the mental activities is not so much in the cell as in the conducting fibrillae, and it is these that are most disturbed in functional psychoses. The functions of the cerebral nerve cell are trophic and perhaps mnemonic.

The cell rapidly deteriorates and changes its content and form, but the nerve fibers are practically unfatigable, although they have as active metabolism as that of gray matter. These fibers are so persistently active because they are supplied with nourishment as well as with protection by the medullary sheath, except at the dendritic and peripheral endings; so we ought to expect exhaustion at the synaptic points sooner than in the cell or in the nerve itself. They would be also more exposed to the influences of toxins and fatigue products.

When a person has a great emotional shock, and there follow tremors, speech defects, paralyses or anesthesias, it may well be because the synapses of certain groups of neurons functionally selected and embryologically of similar development are blocked by the torrent of impulses aroused by fright or pain combined with excess of epinephrin or other toxic material thrown into the blood. Certain parts of the nervous centers are specially sensitive to infections and poisons, as shown in the case of encephalitis lethargica. The Lange-James theory of emotion and the physiologic experiments of others indicate that some physical change takes place in the nervous system which produces or precedes the mental state. In other words, the elaborate psychologic mechanism of the psychoneuroses with its theories of conflict, repression, conversions, compromise formations, condensation-inversion, uncompensated feeling of inferiority, may exist, but all these are not always necessary, and they are always agencies which have to act through a neural mechanism. If this is sound we shall rarely if ever get any psychosis.

The cause of psychoneuroses is not altogether a repressed sexual wish, an uncompensated feeling of inferiority, the basic emotional state of fear, the unsuccessful subconscious conflict, the Oedipus complex, or

4. Very early in evolution, we find that this mode of connection ceases and the cells, now known as "neurons," although in functional continuity, are separated from each other at the "synapse" by a membrane which plays a very important part in the mechanism of the reactions which take place in nerve centers. . . . The phenomena of fatigue, summation, irreciprocal conduction, excitation and inhibition are connected with this membrane (Bayliss: Principles of General Physiology, pp. 474, 477).

5. This view was given and elaborated on in the last edition of my textbook (1915); and Dr. Boris Sidis has independently worked out the same hypothesis, that the anatomic seat of the psychoneuroses is in the synapses, or due to their disturbed functioning. Experience confirms me in the opinion that this is a good working theory.

6. Moore: Proc. Acad. Sc. 3: 598.

the image-parent, if the whole thing disappears under pluriglandular feeding, nux vomica or codein. Yet I have seen all these things occur sometimes.

It is probable that very many kinds of conscious and subconscious mental disturbances, bad mental habits, misuse and misdirection of normal instincts as well as colonic and dental toxemias may lead to the same interference with the function of synaptic groups.

In the higher processes of mental activity there is an increased number of association-activities, and a greater danger of interference at these sensitive points.

In a motor-act, the nerve impulse passes through only two or three neurons. In a simple sensation, the impulse passes through four or five neurons. But in the mental state associated with fear and shock, with its aroused associated memories, the number of neurons and synapses involved is immensely greater and more widely diffused.

We know that in persons who are subject to psychoneuroses there is a congenital or acquired special instability of the nerve centers, including those of the sympathetic and autonomic nervous system. This means, for one thing, that there is a weakness or defect in association and consequently a defect in those associations which give control and balance, the processes of deliberate thought and judgment.

When a slight emotional shock throws a person into morbid panic or tears, it is because some of the associative strands that ordinarily feed into the conscious mind do not act. Some synapses are blocked; some are spastic and overtight in their connections.

There is reason to believe that we can at times control these synaptic functions by force of will—if one chooses to use that now tabued word—or by changing the field of attention. We raise the threshold of consciousness in our intentness and we no longer hear annoying sounds. By training, we prepare the brain and mind against painful impacts. Some persons can lie down and so direct their attention that they put themselves to sleep in a few minutes. We certainly, directly or indirectly, hold much control over the dendrites, if they are healthy. So I am supposing that in psychoneuroses, a sick synapsis may be the factor on which the activities, aroused by some emotion, or by the vibration of Zone C play, and thus, by attacking it, we get all the clinical phenomena of these disorders.

THE MECHANISM OF SOMATIC ORIGIN OF PSYCHONEUROSES

When an emotional state, say of fear, exists, I suppose that vibratory waves and auditory sensations have produced neural changes associated with an intense consciousness of fear, and then perhaps there follows unconsciousness. Many physical changes, vasomotor, glandular, etc., occur at the same time. If this condition now is followed by a hemiplegia or stuttering and tremor, I contend that these latter conditions may be due to subtle changes in the nervous systems. Cellular swelling, varicosity of the dendrites, blocking of synapses, or neuroglia movements. I would add focal injury with diaschisis; for the principle of diaschisis may play a part in minor as well as major local injuries.

The other view, which also may be true, is that after the detonation or concussion and emotion a certain subconscious psychic power is exercised by which the patient determines that he shall tremble and stutter or be hemiplegic or blind in order to accomplish a certain object. This is to assume that some kind of conscious or subconscious force like that of a "censor" loosens certain inhibitions, or sends out or checks a certain intelligently directed morbid neural discharge.

This view is an interesting and plausible hypothesis. I put the matter somewhat like this:

X is the center of detonating force; Zone A, of direct concussion; Zone B, of indirect concussion; Zone C, of indirect concussion by high frequency waves.

The patient in B or C receives and feels:

1. Concussion waves on the brain and hears
2. The detonation.
3. Physical changes occur in the nervous system due to concussion with gross, or fine, or molecular waves.
4. Emotion, e. g., of fear, leading to Nos. 6 and 7.
5. Subconscious desires, defense activities, adjustment activities leading to No. 7.
6. Organic or biochemical disturbances in the nervous system (toxic or endocrinic, leading to No. 7).
7. Psychoneurotic phenomena.

What is claimed by me and shown by experiment is, that Nos. 4 and 5 may not be present and are not always causative factors; also, that in the nontraumatic psychoneuroses, such as the psychasthénias, neurasthenias and anxiety states, Nos. 4 and 6 are dominant, acting on a neuropathic nervous system. This particular form of the neurosis is determined by the special structural weaknesses in the individual's make-up.

REPLY TO OBJECTIONS

Of course, the first and obvious retort to the view I am supporting is this: If a monoplegia, for example, or other form of neurosis has an organic cause, how can it be cured by a single mental effort or by suggestion?

My reply is that the organic change is in more than a majority of cases biochemical, yet real as a sclerosis, brought on by a shifting of neural changes through attention or concentration on a certain object.

In certain emotional and exhaustion states the stomach does not secrete juice, and in the same way the neurons do not transmit their currents. In emotional states the total of neural or cerebral energies is massed in certain minor and major association groups connected with the particular form of apprehension or terror. By effort of volition or by a counteremotion, the equilibrium is restored. But some patients do not get well by any of these easy methods.

The sacred formula of dynamic psychology is that mental activity is a biologic phenomenon—to which we gasp and assent. Every action of the mind must be preceded by a previous action, every thought by some previous mental state. Hence it is said, we can trace back the cause and mechanism of all mental states by sufficient analysis. This view, however, is not proved and is, indeed, proved untrue. Certain mental states may be caused by concussion or by toxins.

CONCLUSION

My argument, then, is to the effect that the psychoneuroses are organic as well as psychic conditions. Being thus in part neurologic diseases, I think it would be a disaster if neurology were to abandon the study of this exceedingly numerous and sorely handicapped group of patients. If this should happen, they would go first perhaps to various types of psychotherapeutic specialists and perhaps later to clinical psychologists

and pedagogues. The last is already happening. The management of these cases calls for the closest observation and the most accurate study of the personality, but also of physical, metabolic and endocrine defects. It is, therefore, to trained neurologists conscious of their responsibilities and familiar with the best technical methods that the care, and I would add the prevention, of psychoneuroses belongs.

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THE PHYSICIAN AND PROHIBITION

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The question now before us is not whether prohibition of the use of intoxicating liquors as beverages is right or wrong—though most of us are convinced that it is one of the most beneficent acts ever passed by a legislature—but, it being the law of the land, how we can aid in its enforcement not merely passively, by obeying the rules and regulations formulated by the authorities, but actively as well by devising ways and means of making easier the establishment of the new order. As the medical and pharmaceutic uses of alcohol offer, at present, some of the most perplexing problems in the administration of prohibition, it behooves us to formulate principles for guidance in our use of alcoholic liquids, most especially to determine to what extent we can dispense with the use of wine, whisky and brandy: for although alcohol prescribed under any other name is just as intoxicating —when it is less pleasant, it is less liable to cause addiction, especially when safeguarded by the regulations of the prohibition law.

USE AS SOLVENT AND VEHICLE

The employment of alcohol as a solvent, vehicle and preservative would be much reduced, and, with this, the chances of the abuse of medicines as intoxicating liquors greatly diminished, if some of the principles here outlined were incorporated in practice.

The solid form should be preferred to liquid medication, not only for this but also for other reasons. Solid medicine is smaller in bulk, and hence more portable. This is the reason traveling men often request that their medicine be prescribed in capsules. Disguising is much more readily accomplished, especially by encapsulation. In view of the fact that, for instance, the horrible taste of the iron, quinin and strychnin combination can be completely disguised by prescribing it in the form of capsules, it is poor technic, to say the least, to inflict the elixir "I. Q. and S." on a patient's palate. Danger from incompatibilities, as, for example, from formation of a poisonous sediment, is also done away with by prescribing in solid form. Furthermore, dosage is more accurate, as variations in the size of teaspoonfuls is eliminated. The chief reason for administration in liquid form is the necessity of minimizing gastric irritation by such agents as soluble iodids, bromids, salicylates or chloral.

The popularity of proprietary medicines, it has well been said, is directly proportionate to the amount of alcohol they contain and the inoffensiveness of their other ingredients. A principle which, it seems, if incorporated in legal regulations regarding proprietary medicines might save the authorities much difficulty in eliminating the use of these nostrums as intoxicating beverages is this: Proprietary medicines must be put up in solid dosage form, unless the dry residue is so highly irritant as to be injurious to the stomach when given in this manner. Thus, the generally specious claim of the necessity of alcohol as a solvent and "preservative" might be done away with, and the use of these tipples ended. It will then be found that, for many proprietary medicines, alcohol was indeed the essential preservative of popularity.

In case of extractive preparations, the coming pharmacopeial revision might do away with tinctures of harmless drugs. The fluidextract of such drugs, being much more concentrated and active, is less likely to be used as a beverage. With poisonous drugs, on the other hand, there is no danger of their tinctures being put to such use.

The entire class of spirits, with the exceptions of the aromatic spirit of ammonia, the spirit of nitrous ether and the spirit of nitroglycerin—all of which are sufficiently medicated—might be deleted from the pharmacopeia, if formulas were devised for flavoring emulsions to take the place of the flavoring spirits. In point of fact, spirit of peppermint or other volatile oil containing spirits, when employed as carminatives or as flavors, are always used in the form of an emulsion, that is, the spirit added to an aqueous medium. Then why not dispense these oils in the emulsified form, which would detract naught from their medical or flavoring value, and eliminate their spirits from the list of possible intoxicants? Spirit of ether, spirit of chloroform and spirit of camphor, being simple, easily prepared solutions, are as superfluous in the pharmacopeia as would be aqueous solutions of iodid or of bromid.

As aromatic elixir is useful for the administration of alcohol-soluble drugs, it might be retained in the pharmacopeia. Until medicated, it is properly classed as an intoxicating beverage and subject to the regulations governing the sale of these. The elixir of glycyrrhiza, being merely aromatic elixir with the addition of 12.5 per cent. of fluidextract of glycyrrhiza, ought to be deleted. The aqueous elixir of glycyrrhiza of the National Formulary, being a valuable vehicle of very low alcohol percentage (4.5 per cent.), might, with advantage, be introduced into the pharmacopeia in its stead. Many of the feebly medicated elixirs of the National Formulary might well be deleted, especially if an "equialcoholic vehicle elixir" were introduced, that is, one whose alcohol percentage would be subject to adjustment by the pharmacist so as to make it equal to the strength of the menstruum used in the preparation of the tincture or fluidextract, for which the elixir is employed as a vehicle. The physician cannot possibly be asked to carry in his mind the strength of all the various menstruums; and, if the alcohol percentage is not correct, a turbid liquid is the result liable to dangerous sedimentation. The pharmacist, on the other hand, with the aid of a tabulation, could readily adjust the vehicle to the medicament. This new "equialcoholic vehicle elixir" might even take the place of the aromatic elixir, now official.

EXTERNAL USES

When alcohol is wanted as a disinfectant, the addition of 1 per cent. or more of iodin, phenol, cresol, or formaldehyd renders it, at one and the same time, more

efficient as a germicide and unfit for use as a beverage. Especially should the addition of iodin to alcohol increase its utility, when it is used for the production of hyperemia as well as for its disinfectant value under an occlusive dressing in the treatment of felons, boils and other subcutaneous inflammations. When, on the other hand, rubefaction is not desired, as in the treatment of infectious dermatoses, then the addition of boric acid to saturation (5 per cent.) cannot but enhance the antiseptic action. The same thing is true of its use in chronic otorrhea. In both conditions, the alcohol is to be used in as great a concentration as can be tolerated—from 25 to 95 per cent. When the astringent action of alcohol is chiefly aimed at, as when it is used for a backrub in a bed patient, a saturated solution of alum in diluted alcohol is preferable to plain alcohol. For antipyretic sponging of the fever patient, the use of alcohol is entirely unnecessary. Cool water will do as well and is much cheaper.

It is only when alcohol is to be used in the mouth as an astringent and possibly as a disinfectant that palatability must not be lost sight of. Even then the lotion may be made much more efficient as well as unsuitable as a tipple by synergistic additions, as for instance in the following prescription, which yields a mouth disinfectant, if such a thing is possible.

		Gm. or C.c.
℞	Phenyl salicylate	1.0
	Menthol	1.0
	Methyl salicylate	1.0
	Alcohol	75.0
	Water to make	100.0

Mix. Label: Teaspoonful to tablespoonful as mouth wash.

This may be used without dilution or diluted with water, according to the potency of the effect desired.

INTERNAL USES

When pure reflex stimulation of the heart and the blood vessels is aimed at, the aromatic spirit of ammonia is as efficient, though not as pleasant to take, as whisky or brandy. If narcotic effect is required, in addition, as in the treatment of shock, the admixture of ether (up to 30 per cent.) makes alcohol at least as efficient as when it is given in the form of whisky or brandy and probably more efficient. It is, however, chiefly because of its value in gastric and other colics, that such solution has earned the name of "anodyne" ("Hoffman's Anodyne"). The diaphoretic and diuretic value of alcohol is enhanced by the presence of nitrous ether in the spirit of nitrous ether, which therefore ought to be superior to whisky for "breaking up a cold."

When desired for its stomachic action, whisky or brandy might find in an aromatic fluidextract of gentian a less intoxicant succedaneum. When wanted for its food value in a fever patient, alcohol in pure form, properly diluted as in milk punch—a teaspoonful to a tablespoonful per cup of milk—may be prescribed, though, of course, whisky or brandy might be employed here, if desired. Prohibition has done nothing to interfere with the use of these; it has merely surrounded it with certain formalities to safeguard the patient against the danger of becoming an addict.

PHARMACOPEIAL RECOGNITION

An attempt will be made, perhaps without any sinister motive whatever, to restore wine, whisky and brandy to the pharmacopeia. This would be a move in the wrong direction. The most that can be said for those liquors is that they are pleasant administration forms for alcohol. However, their very pleasantness has endowed them with such seductiveness and destructiveness that they have become outlaws among us. To restore them to the pharmacopeia would be heralded by the liquor interests as an indication that alcoholic beverages are wholesome and important medicaments, indispensable in medical practice and that the medical profession is now acknowledging the mistake it made regarding them. Prohibition, as now constituted, would be distorted into the appearance of a medical monopoly. "Why should the ordinary man," people would be asked, "have to pay for a medical consultation every time he wants a little whisky to cure a common cold?" "If liquor is a good tonic for the sick why should it not be a good energizer for the well?" Such and other considerations might start a political landslide into the wet abyss.

In point of fact, as has just been shown, whisky and brandy are entirely unnecessary in medical practice. Quite a number of hospitals of Chicago, such as the Presbyterian Hospital and the Cook County Hospital, as well as, of course, the Frances Willard Hospital, do not dispense any of these liquors; and yet their patients, so far as is known, are none the worse for it. As alcohol is the main active principle of the ardent spirits and of practically equivalent therapeutic activity, why burden the pharmacopeia with them? We might as well introduce pyroligneous acid, coal tar and crude petroleum, because it is claimed by some that these native mixtures have a therapeutic value superior to any one of their pure active principles. And, if we were to introduce whisky and brandy, why stop there? Why not also introduce into the pharmacopeia a dry white and red wine, port or sherry, gin and champagne, beer and stout, each of which has, under certain circumstances, special therapeutic virtues perhaps not possessed to the same extent by alcohol. The chief plea that can be made in favor of the reintroduction of liquors into the pharmacopeia is that, now that they are recognized as medicines, a standard for them is required. This standard may, however, just as well and much better be furnished by the authorities entrusted with the enforcement of the prohibition act.

CONCLUSIONS

The medical professon has every reason to welcome the advent of prohibition. It will protect the physician from the danger of causing inebriety in a case in which the patient might be benefited by the medicinal use of alcohol.

For most purposes for which alcohol is required in treatment, it may with advantage be medicated so as to render it unfit for use as a beverage.

The therapeutic employment of liquor, especially in the form of wine, whisky or brandy, ought to be minimized, so as to eliminate the possibility or even the suspicion of abuse. The authorities entrusted with the enforcement of the prohibition law ought, therefore, to have no difficulty in distinguishing between the *bona fide* and the *mala fide* prescriber of alcoholics.

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Good Health and Good Government.—Good health and good government are the two essentials of a great and permanent civilization. These conditions are reciprocal and complementary. Neither can exist without the other.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents,* 1919.

TYPHOID FEVER IN THE AMERICAN EXPEDITIONARY FORCES

A CLINICAL STUDY OF THREE HUNDRED AND SEVENTY-THREE CASES

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DETROIT

(Concluded from page 1081)

THE PARATYPHOIDS

In the Allied armies the paratyphoid fevers have played the dominant rôle, while the typhoid bacillus itself has caused only a small proportion of cases. In contrast, the American Expeditionary Forces have had a comparatively insignificant number of the former. With our total of 270 cases of straight typhoid we have had reported to us only twenty-three cases of paratyphoid B and nine of paratyphoid A, with an additional twelve classed as paratyphoid fever, indeterminate. Reports of foreign observers are concerned chiefly with studies of paratyphoid infections in the straight typhoid vaccinated, and the consensus is that this type of vaccination exerts no protective influence against the paratyphoid organisms.

TABLE 7.—INCIDENCE AND AVERAGE DAY OF APPEARANCE OF SYMPTOMS AND FREQUENT COMPLICATIONS IN TWENTY-THREE CASES OF PROVED PARATYPHOID B.

Symptom	Cases in Which Symptom Was Present, per Cent.	Average Day of Disease on Which It Appeared
Constipation	21.7	1.0
Anorexia	73.9	1.7
Malaise	65.1	1.7
Headache	47.8	1.7
Chill	39.1	2.4
Diarrhea	65.2	3.0
Vomiting	21.7	4.0
Bronchitis	52.2	4.1
Average date of admission	....	4.5
Hemorrhage	4.3	5.0
Bronchopneumonia	4.3	5.0
Abdominal pain and tenderness	42.4	6.6
Lobar pneumonia	4.3	7.0
Meteorism	21.7	10.4
Rose spots	30.4	12.4
Palpable spleen	30.4	13.3
Epistaxis	17.4	15.0
Delirium	13.0	16.0
Average length of fever	....	25.6
Relapse	4.3	32.0
Mortality	4.3	

Close study of the symptomatology among our cases of paratyphoid (Tables 7 and 8) have led us to these conclusions:

1. On the whole, the disease follows a much milder course than does the eberthian infection. The mortality, as contrasted with 11 per cent. in the latter, is 4.3 per cent. in paratyphoid B and 0 per cent. among our nine cases of paratyphoid A.

2. An individual case cannot be distinguished by its clinical characteristics from straight typhoid. Diarrhea occurred in a slightly larger proportion, but so also did initial constipation. The date of onset of diarrhea was, on the average, a little earlier. Rose spots and palpable spleen were not found as frequently. Relapses did occur, and the fever stopped at about the same day in all three types.

3. The only means of definite differentiation in the individual case is that of bacteriologic identification.

I have not presented the symptomatology in paratyphoid A and B infections graphically as I regard the number of cases too small for reliable statistics.

White blood counts plotted according to the day of disease as for the straight typhoid cases showed in general a higher count, which averaged, for the entire period, 10,000 in the paratyphoid B and 9,000 in the paratyphoid A cases.

TABLE 8.—SYMPTOMATOLOGY IN CASES OF PARATYPHOID A INFECTION

Symptom	Present, per Cent.	Average Day on Which It Appeared
Anorexia	66.6	1.0
Malaise	88.8	1.0
Chill	11.1	1.0
Delirium	11.1	1.0
Headache	66.6	1.2
Epistaxis	11.1	2.0
Diarrhea	33.3	2.3
Meteorism	22.2	3.5
Bronchitis	44.4	6.2
Constipation	44.4	7.7
Palpable spleen	44.4	13.3
Abdominal pain and tenderness	22.2	15.0
Rose spots	55.5	19.5
Hemorrhage	11.1	22.0
Duration of fever	....	22.5
Relapse	33.3	35.0
Mortality	0.0	

CLINICAL TYPHOID FEVER

In addition to those classified as infected with one of the organisms of the typhoid-paratyphoid group, we have had fifty-nine cases presenting strong clinical evidence of typhoid fever, but in which the organism was not demonstrated either in the blood or in the stools. This number does not include all cases reported to the chief surgeon as clinical typhoid, as many did not show conclusive enough findings to warrant the diagnosis. The criteria for acceptance into this group were: (1) presence of rose spots and palpable spleen; (2) presence of either one together with a definite leukopenia and a clear history of a continued fever for two or more weeks, or (3) as in one instance, a continued fever of four weeks without rose spots or palpable spleen and without leukocytosis, but with intestinal hemorrhage occurring in the second week.

Tabulation of the symptomatology among these cases gives results quite similar to those of straight typhoid. The incidence of rose spots and palpable spleen is higher; but this is due to the fact that these signs were usually required for acceptance into the group. The logical explanation for the occurrence of these cases would be that bacteriologic examinations were not made often enough, and that had enough been made, the organisms would have been found. This probably is true, but it is also true that examinations were made no less frequently than in the cases of proved typhoid.

TABLE 9.—NUMBER OF BACTERIOLOGIC EXAMINATIONS PER CASE IN PROVED TYPHOID AND IN CLINICAL TYPHOID

Source	Proved Typhoid	Clinical Typhoid
Blood	1.33	1.40
Urine	0.87	1.08
Feces	2.08	3.20
Total	4.28	5.68

We have been unable to find convincing evidence that vaccination lessens the probability of finding the infecting organism, and submit this series merely as cases in which the invading organism is unusually hard to demonstrate. The figures given are, moreover, somewhat misleading, because not in every case were five examinations made. In some there were only one or two, while in others there were many more.

The average white counts for all days combined were 6,700 in clinical typhoid.

TYPHOID CARRIERS

In all, thirty-two carriers were reported, of which fifteen were of straight typhoid, five of paratyphoid B and six of paratyphoid A, while six more were indeterminate paratyphoid infections. Of these thirty-two patients, eighteen denied any previous history of typhoid and three admitted the disease, four years, thirteen years and fourteen years, respectively, before. The individual with a history of typhoid infection four years before also had had a typical paratyphoid B infection in November, 1916. He was found to be a carrier of the paratyphoid B organism. In the remaining eleven cases there was no note as to previous history of typhoid.

Ten of the thirty-two gave a definite history of diarrhea, either occasional or chronic, while seven gave a negative history for this condition. In the remainder it was not discussed.

In the group, twenty-eight had received saline triple vaccine and seven the lipovaccine. Four of these patients had received both. One case was not recorded as to vaccine. All seven patients vaccinated within one month before admission to the hospital had received the lipovaccine, and of these, four had been vaccinated several months previously with the saline preparation. Those thus vaccinated had been so inoculated from one to twenty months previously.

All but one of the thirty-two were of the intestinal type of carriers, while the last had a positive urine culture.

CAUSES OF TYPHOID FEVER IN THE VACCINATED

As was stated at the beginning, this study becomes a study of typhoid fever in the inoculated individual. The records of the 270 cases of straight typhoid studied showed that all had received prophylactic inoculations, and in 207 of them the dates and type of vaccine were recorded. The possible causes of failure of so-called vaccination to protect against typhoid may be thus enumerated:

1. *Absence of Vaccination, Either Total or Partial.*—By this I refer to failure not because of impotent vaccine but because of failure to react in certain individuals. It is well known that after the same doses of vaccine, different persons form differing amounts of agglutinins. But agglutinin titer is not a measure of immunity. We have no criterion that will tell us when an individual is actually immunized, nor have we any means of determining the degree of immunity present.

2. *New Strains of the Organisms Against Which the Vaccine Does Not Immunize.*—Serologic and cultural determinations made in the various laboratories have not consistently produced anything to suggest such a condition.

3. *Failure of Proper Inoculation.*—Among the cases of true typhoid studied, vaccination had been performed in fifty different camps and posts in the United States. This fact, combined with the really excellent results in most individuals vaccinated, renders such a possibility rather remote.

4. *An Overwhelming Dose of the Infecting Organism.*—Absolute immunity to human disease does not exist in man. The highest immunity that can be produced by artificial methods will protect against the antigenic virus only up to a certain limit. I am of the opinion that the greater number of cases of typhoid and paratyphoid in France ocurred as a result of massive infection with a dose great enough to overwhelm the forces of immunity. This, I presume, was most frequently associated also with the first cause enumerated, "absence of vaccination, either total or partial," in that it occurred in those possessing a lower degree of immunity than their more fortunate comrades. As Bernard has so succinctly expressed it, vaccination raises against the typhoid bacillus a great barrier—high, but not insurmountable.

5. *"Back-Handed Typhoid," "Antibody Exhaustion" or "Immunity Exhaustion."*—I include the second designation of this condition as being the most readily comprehensible in view of the existing nomenclature and conceptions of immunity, while I prefer the third as being more scientifically correct. I developed the first term as I recognized more and more of this type in the field, and it has the particular advantage that it emphasizes the assumption that the successive stages of typhoid infection are therein, in a manner, reversed.

The present day conception of typhoid is that of a primary systemic infection. The organisms entering by way of the gastro-intestinal tract are absorbed into the circulation and do not primarily grow as saprophytes in the alimentary canal. After passing through the gastro-intestinal mucosa, the organisms reach the liver through the portal circulation, where they may be excreted through the bile; or some may pass into the general circulation, where they multiply and, after the usual period of incubation, cause typhoid fever. The organisms excreted in the bile may lodge in the gallbladder and there, growing, produce the carrier condition, even though the host has not had typhoid fever.

In a vaccinated person, the organisms entering the portal circulation are either broken up and destroyed by the body ferments or excreted into the bile, or both. In the gallbladder they may find lodgment and continue to grow, in reality outside the body organism, multiplying profusely even though the host be highly immune. The numbers of organisms that are continually discharged in the bile and resorbed through the intestinal mucosa call on the immunity mechanism for constant and exhausting action. There may be superimposed on this a local enteritis caused by one of the typhoid-colon group or any other organism, or even by the typhoid member of the group itself. This subacute or chronic condition, rendering toxic absorption more facile, serves gradually to undermine the constitution. Finally, added to all this, are the hardships of war and army life—exposure, food not always well balanced, fatigue, and perhaps at last some intercurrent infection—and all the conditions required to wear out a body immunity are then present.

It is this reversed process—a local infection or carrier state followed by systemic disease instead of the usual typhoid followed by a carrier condition—that I have chosen to call "back-handed typhoid." Overwhelming doses of the infecting organism and this exhaustion reaction were in my opinion two of the chief causes of typhoid among our troops.

From the nature of the condition it has been impossible to obtain convincing experimental evidence of its presence in France; but a certain amount of indirect evidence appears to warrant our assuming its presence. Our first case occurred in a colleague who, preceding his illness, had been billeted with a French family and who had been drinking unchlorinated water while at his billet. For two weeks or more he had been complaining

of general malaise and a moderate diarrhea, but not sufficient to keep him from his work. At the end of two or three weeks the illness became acute, the usual symptoms of typhoid developed, he became progressively worse, and he died within one week from the onset of the exacerbation.

These cases present the usual clinical histories of ambulatory typhoid, with the definite addition of a local gastro-intestinal pathologic condition and symptoms preceding the disease proper. Otherwise there is nothing unusual about the symptomatology. Especially frequent was this syndrome among the men who had seen active service at the front. From nearly all, a history was obtained of having drunk whatever water they could get, even from the stagnant mud of the shell holes.

To check up on the impression I had gained, I questioned 104 patients as to previous history of chronic local gastro-intestinal disturbance. All were straight typhoid cases. Forty-four denied attacks of diarrhea antedating the diarrhea of the disease itself. Thirty-nine admitted a continuous preceding enteritis varying from one week to three months in duration, and of these, twenty-three had had it for over one month. Fifteen had had diarrhea for from one week to three months while at the front, which had subsided and from which they had been free for from two to three months. Seven additional patients admitted having had a transient diarrhea of from one to five weeks' duration in the two months preceding their disease.

Subacute diarrhea is not a necessary nor the usual antecedent of typhoid fever. The disease begins frequently even with constipation. I would compare the foregoing figures, in which more than 60 per cent. had been afflicted with enteritis, with the statements of the Typhoid Commission in the Spanish American War, that in that epidemic "more than 90 per cent. of the men who developed typhoid fever had no preceding intestinal disorder." I do not believe that the figure of 60 per cent. would hold for all men attacked by this malady in the American Expeditionary Forces, but do assert that it was the case in a representative number of those who had been at the front.

There is no proof that these men were harboring the typhoid bacillus in their intestinal tract previous to coming down with the disease. It is here that my hypothesis fails of absolute proof. Such proof would have necessitated a survey of the stools of all the members of a division, to be followed by weeks or months of watching to see whether the carriers discovered would develop the disease. Moreover, had this been done, the carriers would have been hospitalized and treated, thus defeating the object of the experiment. But corroborative evidence is not lacking. Several observers have reported the finding of typhoid bacilli in the stools of patients a few days or more previous to the onset of the disease, while Battlehner [12] has reported four cases in whose excreta the bacilli were discovered from twenty-one to 117 days before the onset of the disease. These had been considered as healthy carriers. I have a record of one patient who one and a half months previous to admission cared for a typhoid patient and shortly thereafter developed diarrhea, which persisted for six weeks until the typical acute onset of typhoid. In the discussion of typhoid carriers I have called attention to ten out of the thirty-two carriers, with history of diarrhea, none of whom had had preceding typhoid, and one carrier with no history of typhoid and no diarrhea, who, nine months previously at Camp Dodge, had had negative stools for the typhoid group.

I have shown, then, that carriers have been produced in France; that diarrhea is often associated with the carrier condition; that among 104 men, diarrhea preceded the disease in 60 per cent.; that in one instance exposure to the disease was followed by enteritis which persisted for six weeks, until the onset of typhoid. Before absolute proof of back-handed typhoid is produced, I must show that all these facts find sequence in individual cases.

6. *Unsatisfactory Vaccine, Either as Regards Antigenic Properties or Number of Doses Administered.*—Considerable experimental evidence has accumulated to show that with increasing numbers of inoculations the immunity increases. Four inoculations confer a greater degree of immunity than do three. One of the advantages of the method in use in the United States Army is that the men nearly all received the same vaccine in the same dosage and with the same number of inoculations. Observers in other armies were sometimes forced to draw their conclusions from patients who had received different kinds of vaccine and all numbers of injections, from one to four or more. The fact that our vaccine did protect in the great majority of the cases demonstrates the efficiency of our preparation and of the dosage. It may not be ideal, but it is thoroughly practical.

Reed, Vaughan and Shakespeare, in their report on typhoid in the war with Spain, draw these conclusions:

> Typhoid fever is so widely distributed in this country that one or more cases are likely to appear in any regiment within eight weeks after assembly. With typhoid fever as widely disseminated as it is in this country, the chances are that if a regiment of 1,300 men should be assembled in any section and kept in a camp *the sanitary conditions of which were perfect*, one or more cases of typhoid fever would develop.
>
> More than 90 per cent. of the volunteer regiments developed typhoid fever within eight weeks after going into camp.
>
> Even an ocean voyage does not relieve an infected command from its infection.
>
> About *one fifth* of the soldiers in the national encampments in the United States in 1898 developed typhoid fever.

We are prone to think of typhoid fever as being no longer prevalent in the United States. We must remember that more than 150,000 typhoid cases still occur each year, and that, according to Gay, these cause an annual production of 7,500 carriers. We may assume that the statements made in 1898 are equally true in 1919.

Official reports with the accurate numbers of cases of typhoidal infection in the American Expeditionary Forces will not be available for several months; but this total will be below 2,000 cases. This, with a total of more than 2,000,000 men transported overseas, represents a typhoid incidence of less than 0.1 per cent. Although antityphoid vaccination is partly responsible for this diminution in typhoid incidence compared with Spanish-American War figures, a place of great importance must be given to improved sanitary procedures.

SUMMARY

An attempt has been made in this report to study from the point of view of the clinician the disease produced by *Bacillus typhosus* when it invades the body of a person previously vaccinated against that organ-

12. Battlehner, R.: Dissertation, Strasbourg, 1910.

ism. There has heretofore been some difference of opinion as to how much antecedent vaccination will change the clinical picture of the disease. Recent work by several observers tends to corroborate the conclusions reached in this study.

A series of 270 cases in which it was proved by successful cultivation experiments that the patients were infected with *B. typhosus* forms the basis of the work. Although I have accepted in my report all cases reported since January, 1919, it must be borne in mind that in a sense we are dealing with a selected series of cases. That is, I have accepted only those in which we succeeded in isolating the organism. It is possible that many more cases of disease caused by the same germ occurred, but from which the organism could not be isolated. In this connection I have discussed the condition known as clinical typhoid fever in which the symptomatology was characteristic, but in which bacteriologic studies were without result. In the latter type I concluded that the typhoid bacillus or one of the typhoid group of organisms was the etiologic factor, but that its presence was demonstrated with much greater difficulty. On the other hand, I would call attention to the fact that in the 270 cases there was no difficulty in obtaining the germ, its presence in blood, urine and feces being noted in about the percentage usually described for typhoid in nonvaccinated persons.

Throughout the discussion we must bear in mind that a great number of mild and abortive cases of true typhoid may have occurred—cases in which the patients were never sick enough to be sent to the hospital, but which would have been typical typhoid had the patients not been vaccinated against the disease. I agree that there may have been hundreds or even thousands of such cases, how many we shall never know. Surely, many vaccinated persons drank typhoid bacilli and destroyed or excreted them, remaining totally unaffected by the exposure. Surely, also, many did react slightly to the exposure, perhaps with no further symptoms than a rise of temperature of a degree or more during a few hours or a day. It is this reaction which proves that they are immune and are destroying the organism almost as soon as it invades the body—in fact, that they are *not* going to develop typhoid fever. Such a person, though temporarily infected with *B. typhosus,* certainly cannot be said to be suffering from typhoid fever. If the clinical conception of the disease were so amplified as to include all these cases, we should have to admit that practically every vaccinated person when he ingests the germ develops typhoid fever: a reductio ad absurdum. There are probably all gradations from these simplest febrile reactions up to the typical typhoid fever as described. It becomes, then, a question at what stage the manifestation is to be given the name typhoid fever.

When the average man in the army really feels ill, he goes to the hospital. Particularly was this true during the period of this report, when there were no activities at the front—nothing more entertaining than "daily fatigue." So, using the point of view of the clinician, I will arbitrarily say that when a man is admitted to the hospital as a result of typhoid infection he has typhoid fever, and that the others are successfully combating the disease with their immunity mechanism. This is purely arbitrary, and I would emphasize the point that the division is placed here so that we may have a basis for clinical comparison of the disease with the typhoid of the nonvaccinated as they have been studied in hospital. I do not lose sight of the fact that the epidemiologic phase of the situation is far different —that every one of the mildly infected must be considered as typhoid individuals capable of spreading the organism broadcast.

There is no way of telling how many patients with typhoid infection were admitted to the hospital and never recognized as such. The number may have been great or small. A direct attempt to reduce it to a minimum was made at the inception of our work by the issuance from the chief surgeon's office of a rather lengthy circular letter which was sent to all hospitals and medical organizations, directing attention to the disease, describing both the typical symptomatology and that supposed to be found in the vaccinated, and dwelling in particular on the necessary care in differentiating the disease from influenza. All medical officers were requested to watch particularly for the disease in its atypical forms, and to request a laboratory confirmation in any case of doubt. The success of this attempt was indicated by the large number of clinical typhoids and typhoid suspects reported to the division of laboratories and infectious diseases.

In the study of our 270 cases of proved typhoid I have dwelt at some length on the routine laboratory examinations because I consider it desirable to show that in this field as well as in the syndrome of typhoid in the vaccinated, there is no essential difference from the findings in the nonvaccinated. Ten per cent. of relapses might appear a trifle high, but series in the nonvaccinated are reported with this figure. The delay in noting the appearance of rose spots and palpable spleen until the twelfth day, on an average, was probably due to the fact that these signs were not recognized on the first day of their appearance. Those cases studied personally by myself and certain co-workers showed these important signs, as a rule, earlier.

The total mortality in those who did contract the disease has not been shown to be lessened. Ten or 11 per cent. has been the generally accepted mortality for typhoid, but most of these figures have not differentiated between typhoid fever and the paratyphoids. Such, for example, is true of the figures of Osler and of Reed, Vaughan and Shakespeare cited above. It is possible that the mortality for typhoid fever among the nonvaccinated, considered apart from the paratyphoid infections, is higher than 10 per cent. Under any circumstances our figure is more likely to be too high than too low. Severe cases were not in such danger of misdiagnosis as were the mild ones.

Our records do not give us conclusive information on one point that would be of considerable interest to the epidemiologist, that is, the relative efficacy of saline vaccine and lipovaccine. By far the greater number of patients had received the saline vaccine; but those receiving the lipovaccine had the higher mortality. Furthermore, the time interval since inoculation was as a rule much shorter in the case of the lipovaccine. No just comparison can therefore be made.

CONCLUSIONS

1. A study of 270 cases in which the patients, all of whom had received triple typhoid vaccine, were infected with *B. typhosus,* leads to the conclusion that in these hospital cases the clinical picture of typhoid in the vaccinated was similar to that of the unvaccinated. Absence of leukocytosis, continued fever of the usual course and duration, rose spots, palpable spleen,

relapses and complications all remained characteristic of the disease.

2. In our series the mortality was 11 per cent.

3. Positive cultural results from blood, urine and feces were of about the same percentage as with non-vaccinated patients, and the duration of the bacteremia appeared to be the same.

4. Patients infected within eight months after vaccination had an average severity (fatal percentage combined with "severe" percentage) of less than 10 per cent. After eight months, the severity percentage gradually increased. Our figures for later months are not complete enough to allow us to draw conclusions as to the period of maximum immunity.

5. The onset of the disease was more frequently acute when occurring within the first month after inoculation.

6. In sixteen cases with onset from seven to twelve days after inoculation (the usual incubation period), the infection probably occurred during the interval after inoculation.

7. The paratyphoid infections, although much milder as a group, could not be clinically distinguished in individual cases from straight typhoid. They were of much less frequent occurrence than was the latter.

8. It is probable that a large number of vaccinated persons were infected with *B. typhosus* and allied organisms who never became sick enough to require admission to the hospital. In these the immunity mechanism was eventually successful in combating the infection, so that they did not develop clinical typhoid fever. Their epidemiologic importance is recognized. This report deals with the remaining persons—those who in spite of vaccination developed the disease.

9. There are six possible causes of failure of vaccination to protect against typhoid; a new clinical variety is for convenience called "back-handed" typhoid.

10. The incidence of the typhoid group of diseases in the American Expeditionary Forces was less than 0.1 per cent., as compared with 20 per cent. for the Spanish-American War.[13]

INDUSTRIAL BLOOD POISONS

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Some months after the outbreak of the war, large users of anilin, finding themselves deprived of their usual source of supply, were compelled to engage in the manufacturing business for themselves. Before manufacturing methods were improved, and the process finally discontinued, a number of benzene (benzol, C_6H_6) and anilin intoxications occurred which I had the opportunity to study first hand, and the most important of which are herewith reported.

REPORT OF CASES

CASE 1.—*Benzene intoxication.*—Mr. A., chemist, aged 30, in charge of operations, who had been working intensively in benzene for about two weeks, complained, June 12, 1916, of headache, anorexia, lassitude and loss of weight. Suddenly pain in the abdomen developed, accompanied by nausea and vomiting. Physical examination detected nothing abnormal. Temperature and pulse were normal. An examination of the blood, however, revealed a marked leukopenia. The blood was normal in color, but seemed to be lacking in viscidity. There were 5,760,000 red blood cells per cubic millimeter; 1,200 white blood cells; hemoglobin, 85 per cent. (Sahli). The differential count revealed: large mononuclears, 39 per cent.; small mononuclears, 0; polymorphonuclears, 54 per cent.; eosinophils, 0; transitionals, 0.6; other cells, 0; total, 93.6 per cent.

The intoxication in this case was largely from inhalation. Aside from the blood findings, the physical picture is that of a nervous dyspepsia, which was probably true in this case, as the man was of a nervous temperament and anxious over the responsibility of his position.

After a month's leave of absence with complete rest, the leukocyte count became normal and the patient made a complete recovery. It was not our observation that a leukopenia alone, of the severity herein described, would cause symptoms. This view is supported by observation of the following cases:

CASE 2.—*Benzene intoxication.*—Mr. B., chemist, aged 26, exposed about two weeks, with no symptoms, when examined, June 15, 1916, gave a red blood cell count of 4,000,000; white blood cells, 1,250; hemoglobin, 95 per cent.

July 12, after the man had been instructed, but allowed to continue work, the red blood cell count was 4,352,000; white blood cells, 3,200; hemoglobin, 95 per cent.

CASE 3.—*Benzene intoxication.*—Mr. C., chemist, aged 35, exposed about two weeks, with no symptoms, when examined, June 15, 1916, gave a red blood cell count of 3,680,000; white blood cells, 1,700; hemoglobin, 90 per cent. The differential count was: large mononuclears, 9.6 per cent.; small mononuclears, 17.6; polymorphonuclears, 69.6 per cent.; eosinophils, 0; transitionals, 0.32; total, 97.12 per cent.

July 12, after being advised, but allowed to continue work, the patient's red blood cell count was 4,032,000; white blood cells, 3,800; hemoglobin, 90 per cent.

Both of these men completely recovered.

CASE 4.—*Benzene-anilin, mixed intoxication.*—M. S., aged 45, laboratory helper, inhaled vapors from an anilin reducer and received a mixture of anilin and free or unreduced benzene, which is occasionally present in an anilin reducer. The patient was seized with headache, chills, nausea and vomiting. I saw him, Oct. 20, 1916, within a few minutes after the onset of the symptoms. He was very cyanotic. The pulse was dicrotic, rate 110. The systolic blood pressure was 119; diastolic, 73. The blood was dark brown. The red blood cell count was 5,200,000; white blood cells, 10,200; hemoglobin, 90 per cent. (Sahli).

October 21, sixteen hours later, the cyanosis was gone, the pulse was of good quality, the systolic blood pressure, 137; diastolic, 92, and the blood normal in color. The red blood cell count was 5,600,000; white blood cells, 1,440 (check by another, 1,200); hemoglobin, 90 per cent.

October 24, seventy-two hours later, the patient felt well and was anxious to return to work. The red blood cell count was 5,491,000; white blood cells, 6,640; hemoglobin, 92 per cent.

The interesting observations in this case were the selective action of benzene on the white blood corpuscles, the depression of blood pressure, and the rapid recovery.

CASE 5.—*Anilin intoxication.*—R., aged 49, employed twelve years, climbed inside an anilin reducer, June 26, 1916, to clean out sludge with hose. He had worked only a short time when he began to feel dizzy and nauseated, and to experience a "warm sweet taste" in his mouth. With presence of mind he quickly climbed out of the reducer and was assisted to the hospital. According to his account, he did not entirely lose consciousness, but seemed to be overcome by mental confusion and great bodily weakness. I saw him within an hour after the onset of the symptoms. The picture was that of collapse. The complaint was headache and chilliness, although the man was perspiring freely. The skin and mucous membranes were intensely cyanotic; the temperature was 101 F.; the pulse was weak and dicrotic, rate 110. The

13. In addition to the references already given, the following will be found of interest:
Vaughan, V. C., Jr.: Report on Typhoid Fever in Troops Stationed in the Vicinity of Marseilles.
Freeman, A. W.: Med. Officer, London, **17**: 71, 1917.
Vaughan, V. C., and Palmer, G. T.: J. Lab. & Clin. Med. **3**: 635 (Aug.) 1918; ibid. **4**: 587 (July) 1919.

systolic blood pressure was 110; diastolic, 60. Six hours after the administration of 3 grains of camphor hypodermically, the blood pressure rose to 130 systolic and 85 diastolic. The blood was chocolate brown, flowing very freely. The red blood cell count was 3,520,000; white blood cells, 10,600; hemoglobin, 95 per cent. The differential count revealed nothing important. Owing to a peculiar strangury, the patient was unable to void for several hours. The urine, when obtained, was dark, and contained no sediment. Its specific gravity was 1.020; it was acid in reaction and negative for albumin, sugar and bile. There was a trace of anilin. Methemoglobin could not be demonstrated in the urine.

June 30, the man still had headache and complained of soreness in his chest. He was still cyanotic, though improved. The pulse was very soft, the systolic blood pressure, 115; diastolic, 60. The red blood cell count was 2,944,000; white blood cells, 4,400; hemoglobin, 95 per cent. The urine was normal in color with negative findings.

July 7, he was still slightly cyanotic, but headache had disappeared. The pulse was 88, and of much better quality. The red blood cell count was 3,112,000; white blood cells, 4,140; hemoglobin, 90 per cent.

July 13, he was no longer cyanotic. He felt well except for slight nervousness and insomnia. The red blood cell count was 4,208,000; white blood cells, 4,300; hemoglobin, 91 per cent.

CASE 6.—*Anilin intoxication.*—S. B., aged 41, washed some clothing in anilin, Oct. 30, 1916, and immediately became ill, complaining of weakness and headache. Cyanosis was pronounced. His temperature was 99.5 F. The pulse rate was 88, the systolic blood pressure was 130, and diastolic, 98. The blood was chocolate brown. The red blood cell count was 3,420,000; white blood cells, 8,040; hemoglobin, 88 per cent. The urine was dark colored, with negative findings.

November 6, he was much improved. The blood cell count was 5,024,000; white blood cells, 8,800; hemoglobin, 90 per cent. The temperature and pulse were normal.

CASE 7.—*Anilin intoxication.*—J. K., aged 40, poured iron into an anilin reducer and inhaled the fumes, July 12, 1916. He became ill with headache, dizziness, cyanosis and perspiration. The temperature was 99 F., pulse 96, water hammer type. The systolic blood pressure was 112, diastolic 60. The red blood cell count was 2,262,000; white blood cells, 4,800; hemoglobin, 92 per cent. The differential count was not important. The urine was dark colored with negative findings. The patient made a complete recovery.

CASE 8.—*Anilin intoxication.*—N. M., aged 28, poured iron into an anilin reducer and inhaled the fumes, Aug. 9, 1916. He became cyanotic and complained of headache. The temperature was 98 F. The pulse was 92 and of good quality. The systolic blood pressure was 118 and diastolic 75. The blood was chocolate brown. The red blood cell count was 4,160,000; white blood cells, 4,400; hemoglobin, 95 per cent. The patient was unable to void for several hours.

August 10 he was much improved, but was still cyanotic. The red blood cell count was 3,800,000; white blood cells, 6,200; hemoglobin, 95 per cent. The urine was dark amber with negative findings.

August 16 the red blood cell count was 4,000,000; white blood cells, 6,000; hemoglobin, 95 per cent.

In this case, although the cyanosis was pronounced, and the blood very dark, the cell destruction was slight. The poison apparently overwhelms the oxygen carrying capacity of the blood by the formation of methemoglobin, which may be more important in producing cyanosis than either disintegration of the red cells or formation of anilin black, as described by Engelhardt.[1]

CUMULATIVE ACTION

In December, 1916, I began the study of ten cases subject to more or less exposure, to determine if possible the cumulative properties of benzene. The service of these men ranged from one week to five years and seven months. Monthly blood counts were made, and all were found to be practically normal.

It is my opinion, not that benzene and its amino-derivatives possess any very definite cumulative action, but that the anemias of which they are the cause follow a definite intoxication or a series of definite intoxications. It remains to be determined, however, whether or not the constant inhalation of even minute quantities of benzene vapor from spreading machines, cement cans and other sources would tend to interfere with proper oxygenation of the blood and tissues, even when there is no cell destruction, and thus undermine the worker's resistance to disease.

CONCLUSIONS

1. Workers chronically exposed to benzene may show leukopenia without any other symptoms, and make complete recovery.

2. Acute exposure to anilin and nitrobenzene vapors produced cyanosis with destruction of the red blood corpuscles, but with little change in the white corpuscles, with recovery. In one case in which free benzene was presumably present, there was destruction of white cells without appreciable destruction of red cells, and a more rapid recovery, that is, in three days.

3. The maximum white cell destruction by benzene, and the maximum red cell destruction by anilin-nitrobenzene, may not be reached for several hours after the onset of the symptoms.

4. Workers exposed for long periods to benzene may not have a leukopenia; apparently, therefore, the action is not cumulative.

1. Engelhardt, cited by Blyth, A. W.: Poisons: Their Effects and Detection, New York, the D. Van Nostrand Company, 1902.

PARAPLEGIA AFTER ARSPHENAMIN IN A CASE OF RETROBULBAR OPTIC NEURITIS *

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This case is presented not solely for its extremely interesting features, but to some extent because of the arbitrary attitude of some of my confrères in attributing a sequence of the usual syndrome to be expected in an acute optic neuromyelitis of syphilitic causation to the administration of arsphenamin. Furthermore, the number of cases of the incongruous syndrome of retrobulbar optic neuritis with myelitis reported in the literature is limited, and the beneficial effects of arsphenamin on the retrobulbar neuritis, while the same remedy seemed to be the exciting agent in the development of the paraplegia, add increased interest.

History.—A man, aged about 34, unmarried, complained that his sight was failing him, one eye being, in fact, practically blind. This eye condition started, May 1, 1918, with a constant pain in the eyes, and a deeper pain both on movement of the eyeballs, and when the eyes were pressed back into the socket. He had always considered himself healthy, though he was of delicate structure. The family history was negative and did not show anything of interest, neurologically or otherwise. The patient had had the usual diseases of childhood, which apparently had no bad effect on him. He emphatically denied any venereal disease. He consulted his first oculist, May 3, when the vision of the right eye was 20/50 and of the left eye 20/15. Ophthalmoscopically, the fundus was reported negative. The vision in the right eye was not improved by lenses. Dark glasses and zinc drops

* Owing to lack of space, this article is abbreviated by the omission of a bibliography. The complete article appears in the author's reprints.

were prescribed. Pain continued in the eyes, and, May 7, vision had fallen to 20/200 in the right eye and 20/20 in the left. His refraction, on being determined again, showed no improvement, and the fundus was reported normal. A solution of atropin was instilled, and this greatly lessened the pain in the eyes.

May 8 he consulted a second oculist, who also found the fundus normal and could not account for the loss of vision.

Examination.—May 10, the patient consulted me. The vision was 15/200 in the right eye and 20/40 in the left. Ophthalmoscopically, the fundus details were negative. There was no diplopia, though there was a slight nystagmus in the right eye. The sinuses, as a possible cause of the blindness and the pain in the eyes, were ruled out. The field of vision showed the colors reversed, the spiral fatigue field of neurasthenia, and a central color scotoma present. The neurologist reported the patellar reflex exaggerated in one leg and sluggish in the other. This neurologic examination was so void of any aid in the diagnosis that a buried complex was thought of, and a tentative diagnosis of hysteria was made. The patient was advised to continue going to his office and to consult me the next day. He followed these instructions, and while on his way to the office he fell into a street excavation, slightly injuring his knee. It is questionable to what extent his impaired vision was a factor in this fall, for it was learned that for some time indefinite pains had caused him to use a pillow behind his back while driving his car, that he had been suffering from paresthesias in his legs, which had been quite annoying, and that some slight urinary disturbance had been present.

Despite the fact that the patient had recently gone blind in one eye, and the other was rapidly failing, he seemed unconcerned. This mental state changed in a few days, and he became so irritable that he was taken to an institution, May 13.

The neurologist who accompanied him remarked for the first time that he did not walk well, and that he appeared weak in the legs. His mental state was now such that it became necessary to resort to sedatives and hypnotics.

The Wassermann reaction by the original method and that of Tschernogowbou was negative. The total leukocytic count was 5,500. The differential count was: neutrophils, 66 per cent.; lymphocytes, 28 per cent.; large mononuclears, 6 per cent.

The specific gravity of the urine was 1.021. Its reaction was acid.

Tests for albumin, sugar, acetone and diacetic acid were negative; for indican, positive. Microscopic examination revealed an excess of leukocytes, much mucus, and hyaline and granular casts.

The patient suffered a complete loss of sight before any other symptoms developed to make possible a diagnosis, though some precursory symptoms obtained in his history were not recognized at the time as being important. A conspicuously healthy eye interior, ophthalmoscopically, in a blind patient offered no explanation, and it seemed that the nearly scientific branch of medicine, ophthalmology, must resort to that meaningless term "amaurosis."

Daily fundus examination elicited no information until the morning of May 13, when there was discovered a distinct elevation of the optic nerve of both eyes. This elevation was greater in the right eye. The pupils were widely dilated and did not respond to light. The patient's mental irritability and the choked disk made me suspicious of a brain tumor; hence, no spinal puncture was made at this time. Tuberculosis was ruled out by physical examination and roentgen-ray studies. A roentgenogram of the cranium was negative.

Treatment and Result.—On the afternoon of May 14, 0.06 gm. of arsphenamin was administered intravenously. On the following morning, the patient complained of stiffness in the legs, and pain in the back, and he asked that a hot water bag be placed over the region of the kidneys, for he had not voided his urine. It was then found that he could not move his right leg, and during the afternoon this paralysis extended to the other leg. It was necessary to catheterize the bladder and later to contend with an overflow of the urine. He suffered an inability to evacuate the bowels, and subsequently an incontinence of feces. He developed decubitus and a very painful hyperesthetic area of the left arm. The paralysis of the legs was absolute, and all voluntary motion, and sensation in all its qualities, including temperature and touch, was destroyed. Different degrees of deep and superficial anesthesia and hyperesthesia extended to within an inch of the nipple anteriorly, and not quite so high posteriorly. The reflexes were abolished in the legs with a flaccid paralysis, and the appearance of a rapid wasting. The whole presented a picture very alarming.

Two days after the injection of arsphenamin, the elevation in the optic nerve had improved and within the next day had disappeared entirely, leaving a normal appearing optic nerve, though the patient was blind.

As there was no longer fear of intracranial growth, a spinal puncture was made. It must be remembered that this puncture was made after the paraplegia developed; needle traumatism or introduced infection could not have been the cause for the paraplegia. When the definite paraplegia did develop, the diagnosis "retrobulbar optic neuritis with myelitis," both of syphilitic causation, won my acceptance only after a careful study of the literature of these associated conditions; and this diagnosis is confirmed by the laboratory tests and the therapeutic results obtained.

Spinal puncture was made, and during the operation the back was found rigid and offered some difficulty to the introduction of the needle. The fluid was clear and was not under pressure but, to the contrary, was obtained drop by drop. The pathologist who examined the fluid reported that with 0.75 c.c. of fluid, the Wassermann test was negative; the cell count was 173; the globulin test was ++++; smears for tubercle bacilli were negative; the colloidal gold test yielded a clear-cut zone reaction, indicative of, or in accord with, that found in tuberculosis; cell differentiation revealed: polymorphous neutrophils, 1 per cent; lymphocytes, 95 per cent.; endothelial leukocytes, 3 per cent.

A provocative blood test was found negative.

In spite of the apparently harmful effect of the arsphenamin, a second dose of 0.06 gm. of arsphenamin was given, May 21, and a dose of 0.09 gm. of neo-arsphenamin was given a few days afterward. Mercury was used by inunctions and the iodids were used in increasing doses, and for weeks the patient was taking 75 drops of saturated solution of potassium iodid three times a day.

I relinquished the case, June 19, and from that time on the only other medication was strychnin and electrical stimulation. Jan. 14, 1919, the patient informed me by mail that he could then walk and had a vision practically perfect. Jan. 24, 1920, he was on the streets getting about without any assistance, but there remained some bladder disturbance.

COMMENT

Did the arsphenamin produce the acute transverse myelitis? We know that the retrobulbar optic neuritis existed before the drug was administered, and its use produced an improvement in the optic nerve elevation. I did not think that the drug produced the myelitis, and I emphasized this belief by repeating the drug and a third injection to the benefit of the patient. There was no increased harm produced by the repeated injections; to the contrary, the patient improved. He again saw and walked. Apropos of the foregoing is a case report by Elschnig [1] on "a case of retrobulbar optic neuritis with myelitis," in which he says: "The eyes were affected first, and during the treatment paralysis developed and the patient refused further treatment." Ullrich von Hutten [2] thought, as did others, that "paralysis in syphilis was to be attributed to the use of mercury." In the same book [3] in which he makes this observation there is a report of a case of "acute myelitis with decubitis developing during the use of mercury inunctions." Will history

1. Elschnig: Klin. u. anat. Beitrag zur Kenntnis der acuten retrobulbar Neuritis, Arch. f. Augenh. **5**: xxvi.
2. Von Hutten, in Nonne's Textbook, Cerebrospinal Syphilis, p. 4.
3. Nonne's Textbook, p. 263.

repeat itself and arsphenamin run the same gamut? I fear it will.

McCaskey [4] reports four cases from the literature and one that he observed in which paralysis developed after the use of arsphenamin. All of these patients were syphilitic. All received more than one injection. One received a Swift-Ellis treatment and another a subdural injection. It is extremely doubtful in my mind that these cases are to be explained on purely toxicological grounds, though the bad effect was produced by more than one injection. Other drugs have been thought to produce paralysis. Webber [5] states that "the use of strychnin given before a relapse in myelitis is a circumstance demanding special notice," for he has seen bad effects following the use of strychnin in disease of the spinal cord, and he does not feel justified in using it.

Collins [6] reports a case of sudden paraplegia occurring after the injection of "autolysin" in a syphilitic subject. He says: "The autolysin was a coincident in the production of the paraplegia and he could not eliminate syphilis despite the negative state of the blood and the spinal fluid."

Socin [7] reports a case in which "a woman, aged 38, with a history of abortions and miscarriages, whose husband died of softening of the brain, suffered with a syphilitic eruption on the body. She received two doses of arsphenamin. The second dose produced an encephalitis and a severe affection of the spinal cord, with a decubitus. The patient died. The study of the cord was interpreted as a toxic myelitis." I hesitate to accept his interpretations, for we lack exactness and undoubted proof in differentiating a toxic spinal lesion that might be confused with syphilitic condition. It is for us to discover more readily the spirochete and clarify this doubtful etiology.

Then is not arsphenamin injurious to nervous tissue? Erlich states that the drug is not injurious to nervous tissue. The drug was thought at one time to have an unfavorable influence on the optic nerve but not the cord. This was probably the outcome of the injurious effect of atoxyl and other aromatic arsenic preparations.

Schoenburg [8] says that to those who have used a great deal of arsphenamin in syphilis of the central nervous system, "one thing is clear, namely, that it is not injurious to the healthy or damaged optic nerves if administered in proper doses and at proper intervals."

St. John Johnson [9] experimented on rabbits with arsphenamin as to its therapeutic and toxic doses. Twelve rabbits were thoroughly impregnated with arsenic by arsphenamin injections. The dose of 1 decigram was lethal to but three rabbits; the others lived throughout the treatment, and at necropsy, arsenic was recovered in the tissues examined. In none of the twelve was an optic neuritis to be produced. These experiments, taken in connection with the fourteen cases of optic neuritis discovered during the survey of patients before or during the treatment of syphilis in which the optic nerve lesion disappeared rapidly under arsphenamin treatment, show that in these cases at least, arsenic has had no influence on the development of an inflammation of the optic nerve; rather contrariwise; when neuritis had already developed, the specific treatment caused rapid resolution. Thus it seems, Johnson concludes, the fear of production of blindness by therapeutic doses of arsphenamin is unwarranted.

The evidence presented justifies a parallel deduction as to its harmful effect on the spinal cord.

Further possibilities arose in the production of the paraplegia, demanding an explanation. In the case that I report was it a Herxheimer reaction? This reaction is an inflammatory response noted after the use of specific treatment in syphilis and is alone observed in syphilitic subjects. The reaction is spoken of as a disturbance of the endotoxins, and an excitation of the spirochete by insufficient dose of the drug.

I hesitate to accept as an explanation of this reaction that it is dependent on a questionable endotoxin or even on a toxin. The reaction might be explained as an indirect focal protein reaction, and this is occasioned by dead spirochetes. I believe, not that this was a Herxheimer reaction, but that it was a case of retrobulbar optic neuritis with myelitis, which is a definite clincal entity, and the paraplegia must play its part in the syndrome.

Hillion [10] defines the process as a clinical syndrome characterized by a diffuse myelitis, oftenest acute, preceded, accompanied or followed by an optic neuritis.

This clinical entity, so well defined, dates to the writings of Erb and Steffan, who in 1879 reported a case of transverse myelitis in association with a retrobulbar neuritis.

Goulden [11] collected fifty-two instances. The eye symptoms appeared first thirty-six times, the spinal cord symptoms ten, and there was simultaneous appearance of eye and cord symptoms three times. The order of appearance was not stated three times.

The cases reported by Dreschfeld, Knapp, Chisholm, Mohokian and Hennenberg showed a definite choked disk. A great number of all the cases were without fundus changes at the beginning, though the eyes were blind.

Weisenburg [12] states that there is rarely a return of vision, and that there are only three cases on record in which the return of vision was complete. There was usually a resulting white atrophy of the optic nerves.

The death toll has been at least 60 per cent., and thirty cases have gone to necropsy. In the anatomic and pathologic studies made, all are agreed that the optic nerve lesion presents the same pathologic condition as found in the cord, that is, a softening, a degeneration and a neuroglial proliferation.

Bielschowsky considers the neuritis primary and parenchymatous. Anatomic continuity of the lesion in the cord has not been demonstrated. Elschnig believes that the optic neuritis is interstitial and that the vision is destroyed mechanically.

The etiologic factor in the production is well stated by Nettleship,[13] who says that in his experience fifty per cent. of the symptomatic retrobulbar optic neuritis cases in contradiction to idiopathic are due to syphilis, and, further, that since 1899 experience has shown that a large percentage are caused by syphilis and in the future many so-called idiopathic cases will, with the aid of serum diagnosis and improved methods, come under this heading.

4. McCaskey, G. W.: Salvarsan and Neosalvarsan Myelitis, J. A. M. A. **69**: 1960 (Dec. 8) 1917.
5. Webber: Boston M. & S. J., 1880, p. 102.
6. Collins: Neurological Clinics, pp. 172-181.
7. Socin: Cor.-Bl. f. Schweiz. Aerzte **46**: 1537 (Nov.) 1916.
8. Schoenburg, M. J.: Am. J. Ophth. **2**: 518 (July) 1919.
9. Johnson, St. John: Am. J. Ophth. **2** (Oct.) 1919.
10. Hillion, H.: Paris thesis, 1906-1907: "On désigne sous le nom de neuro-myélite optique aigüe, un syndrome clinique caractérisé par une myélite diffuse, le plus souvent aigue, précedée, accompagnée ou suivie d'une névrite optique à évolution parallèle."
11. Goulden, Charles: Ophth. Rec. July, 1914.
12. Weisenburg, in Posey and Spiller: The Eye and Nervous System, p. 569.
13. Nettleship, in Parsons: Pathology of the Eye **5**: 4, 1913.

In my case, though the Wassermann test was negative both for the blood and for the spinal fluid, the other tests show that the etiology was that of syphilis. I have been able to compile seventy-two cases. Forty-six cases were studied most carefully. Of the forty-six, seventeen patients undoubtedly had syphilis, shown either by a lesion or an acknowledgment of having had the disease. Twenty-eight died. Necropsy was held on twenty-one. Either a total or a partial atrophy was the result in all cases but three.

The subject has been the occasion for theses by Hillion, Gault, Picqué and Faure. Hillion reported forty-five cases. Devic reported twelve cases; Taylor gives a bibliography of twenty-five references.

CONCLUSION

It is well to remember that syphilis presents a vagary of symptoms at times lacking a definite explanation. What appears as an incongruous syndrome both pathologically and clinically is very often to be made clear when syphilis is taken into consideration, and an appreciation of the changes that might occur from a syphilitic arteritis, better known as a Huebner arteritis. To rid ourselves of dissenting opinions in unclassical cases, it will be essential to find the spirochete present. Then we may emphatically state the existence of the syphilitic disease.

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EPIDEMIC ACUTE HEMORRHAGIC JAUNDICE OF TOXIC ORIGIN

ITS SYMPTOMS AND PATHOLOGY

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During a period of ten weeks, commencing the middle of December, 1919, sixteen patients were admitted to Bellevue Hospital suffering from a variety of acute hemorrhagic jaundice. Of this number nine died—a mortality of 56.2 per cent. Clinically and anatomically the disease presents features which, on the one hand, are strikingly similar to those of infective jaundice and yellow fever, and, on the other, to acute yellow atrophy of the liver. Moreover, it has been a subject of remark that cases corresponding in all essentials to acute catarrhal jaundice have recently been received in numbers noticeably in excess of the routine experience of former years. It is possible that some of these represent a mild form of the epidemic disease, although in such patients stupor or delirium and hemorrhages are conspicuous by their absence, and recovery is the rule.

In eight of the sixteen cases of acute hemorrhagic jaundice, unsuccessful attempts were made to find spirochetes in stained films of blood taken from living patients. In addition, fresh blood or urine, depending on the stage of the disease, or both, were injected into guinea-pigs in an effort to reproduce the changes, as has been claimed in infective jaundice and yellow fever; as a routine measure 15 c.c. of blood were divided into equal parts and injected into the peritoneal cavity of three guinea-pigs, and 50 c.c. of urine, removed by catheter, were centrifuged, and from 2 to 5 c.c. of sediment, according to the total quantity procured, were injected into one or several guinea-pigs. The results were uniformly negative. None of the animals dying spontaneously within the period of incubation—from six to thirteen days—or killed thereafter, showed the slightest indication of jaundice or hemorrhage. In three of the hospital patients, sections of the liver and kidney removed at necropsy were stained by the older method of Levaditi, but no spirochetes were found. In thirteen of the sixteen cases, blood cultures were negative; the others were not taken. In three patients who succumbed with symptoms of acute yellow atrophy of the liver, chemical examination for the heavy metals, particularly phosphorus, was negative (Dr. Gettler).

Of the sixteen cases, six were investigated by necropsy. In addition to jaundice and hemorrhages in the skin, mucous and serous membranes, various viscera and elsewhere, the kidneys were found to show cloudy swelling or necrosis of the tubular epithelium, while the changes in the liver varied from intense granular degeneration to those commonly described as acute yellow atrophy. In three instances the mucosa of the gastro-intestinal tract was greatly swollen and dirty grayish blue, while in the other three no changes were apparent to the naked eye, but were disclosed on microscopic examination.

In view of the fact that the disease occurs in epidemic form and is consequently to be expected in other quarters, its clinical aspects and the findings in those cases that were investigated postmortem are presented in this paper at some length.

SYMPTOMS AND PATHOLOGY

The prevailing type of epidemic jaundice, as we have seen it at Bellevue Hospital, is divisible into two symptomatic groups. The first group is characterized by jaundice of the conjunctivae, preceded, as a rule, by lassitude, digestive disturbances and other prodromes, and is accompanied by physical signs indicative of bronchitis. The patient takes to his bed, and in the course of the next few days jaundice becomes generalized and intense, the color is oftenest a greenish yellow, occasionally bright saffron, the conjunctivae are suffused, and hemorrhages are constant—epistaxis, hematemesis, melena, hemorrhagic vesicles about the lips and chin, and petechial or splotchlike extravasations in the skin or visible mucous membranes, in the former situation corresponding, in many instances, to scratch marks, the pressure of bedclothing, and other trivial injuries. By this time the mental condition of the patient is such as to fix the attention of the observer. The patient is languid, drowsy, stuporous or irritable and restless, sometimes irrational. The stools are clay colored. Vomiting and diarrhea occur but are not common. Frequently, indeed in the majority of cases, the patients complain of pain in various localities, and even though stupor be pronounced, signs of tenderness may easily be elicited by pressure on different parts of the body. In two of the Bellevue Hospital cases the combination of jaundice, clay colored stools, vomiting and epigastric pain and tenderness seemed to point to mechanical obstruction to the outflow of bile, and the abdomen was opened, but no cause was found. In the group under consideration, temperature, pulse and respiration are variable quantities, and appear to be determined largely by intercurrent conditions, such as bronchitis, pleuritis and the like. Moderate leukocytosis is the rule—from 11,000 to 24,000. The differential count is normal.

The urine contains albumin, bile and granular casts in abundance. At necropsy, these individuals show, in addition to the superficial signs of jaundice and hemorrhage, icterus of the deeper structures, notably the liver and kidneys, and hemorrhages in various tissues—the lungs, serous and mucous membranes, and soft tissues. In the lungs the physical signs seem to be due, in part at least, to the escape of blood into scattered groups of air vesicles. The kidneys show a degree of acute parenchymatous degeneration rarely surpassed, graduating not infrequently into necrosis of the tubular epithelium, diffusely or in large patches, with or without intratubular or interstitial hemorrhages. The liver exhibits cloudy swelling attended on occasions by dissociation of parenchyma cells and by fatty transformation and even death of cell groups, more particularly in those localities where bile imbibition is pronounced (the so-called icteric necrosis).

The second group is characterized by severe jaundice, wild delirium and rapid death. In such cases the liver presents histologic signs of diffuse necrosis, although the naked eye appearances may be those of a relatively well preserved organ. In other instances, necrosis of liver tissue is attended by innumerable hemorrhages, and the naked eye changes are then indistinguishable from those of the so-called acute yellow atrophy.

PATHOGENESIS

Perhaps the most illuminating feature in the pathology of the disease as a whole is to be found in necrosis of the gastro-intestinal mucous membrane without obvious interference with the escape of bile through the duodenal papilla. That bile does not escape, however, is shown not only by the degree of jaundice, but also by the acholic state of the intestinal contents, depending, apparently, on conditions in the liver cells and bile capillaries, rather than on mechanical obstruction to the exit of bile from the larger ducts. The changes in the gastro-intestinal mucosa are such as to suggest that the provocative agent is absorbed by the tributaries of the portal vein and conveyed to the liver, where the necrotic lesions correspond definitely to the distribution of the portal blood; that is to say, the liver lobules are destroyed, while the interlobular connective tissues with their blood vessels and bile ducts are relatively unchanged. The hemorrhagic extravasations in different tissues are secondary, most likely, to injury of the capillary endothelium by bile salts, promoted, perhaps, by lack of fibrinogen such as has been demonstrated in other destructive lesions of the liver, notably in experimental chloroform necrosis.

In view of the fact that we have not been able to produce the icteric and hemorrhagic changes in animals by the same methods that are said to yield positive results in so-called spirochetal jaundice, I am inclined to regard the disease under consideration as a toxic process, the reaction to which varies with the individual, some persons responding rapidly and with great violence, others more slowly and less severely. That the provocative agent is not being constantly renewed does not vitiate the contention, since it is known that the effects of certain poisons are delayed and that, once the liver is damaged in such manner that autolytic enzymes are released, a series of changes is initiated that becomes independent of the original cause. At the same time the toxic effects of bile are to be taken into consideration.

THE MORE PROLONGED CASES

Case 1.—*History.*—A man, aged 55, who was admitted to Bellevue Hospital, Dec. 15, 1919, and who died, December 23, stated that for two months he had been troubled with "indigestion" and pain in the abdomen, most marked in the epigastrium. About ten days before admission the pain in the region of the stomach became intense, radiating to the back and shoulders, particularly the right shoulder. At the same time the patient developed symptoms of retching and was unable to retain food, vomiting immediately after eating, and there was severe diarrhea. On admission he was intensely jaundiced and very drowsy. During his stay in the hospital he was frequently irrational, and complained of itching of the skin. Muscular twitchings occurred at intervals and lasted for considerable periods. On admission the patient's temperature was normal and remained so for six days; on the seventh day it was 100.5 F., reaching 101 on the eighth day, where it remained until death occurred on the ninth. The white blood cells numbered 15,200; the differential count was normal; hemoglobin, 65 per cent. The urine contained albumin, and bile and granular casts were abundant.

Because of the jaundice, clay colored stools, vomiting and the intense pain in the abdomen, the patient was operated on and the gallbladder opened and drained. It was found to contain a moderate quantity of slightly viscid bile.

Necropsy.—There was intense jaundice of the skin and visible mucous membranes, the viscera, heart valves, etc. The lungs presented innumerable pleural and parenchymatous petechial or splotchlike hemorrhages. The kidneys were markedly enlarged and very flabby, diffusely greenish yellow, and friable. The substance was swollen and opaque, and the markings were irregular in distribution, the tufts, however, standing out as minute reddish specks. The mucosa of the stomach from one end to the other presented a dirty grayish blue, succulent appearance, and was swollen and irregularly covered by tenacious mucus, the rugae being flattened. The mucosa of the entire intestinal tract was similarly swollen, thickly covered by a milklike fluid, and the folds, particularly in the jejunum, were extraordinarily prominent, edematous and dirty pinkish. The liver was about normal in size, smooth, deeply jaundiced, the markings fairly distinct, and the cut surface somewhat resembling a nutmeg. No focal lesions were visible. The mucosa of the larger bile ducts was bathed in thin mucoid secretion, the duodenal papilla was patent, and no obstruction was apparent in the vicinity.

Microscopic Examination.—The liver cells showed marked dissociation, as if the liver had been given a severe shaking, the cells were cloudy, irregular in size and distribution, indistinct in outline, and their nuclei obscured. In many instances the central veins were distended by blood, and groups of intensely jaundiced liver cells were arranged circumferentially to the central vein or in streaks through the lobule. The kidney showed widespread granular degeneration, particularly the epithelium of the convoluted tubules, with desquamation of bile stained cells into the lumen. The mucosa of the stomach, duodenum and jejunum showed a superficial necrotic layer made up of pinkish-staining débris and glandular remnants, among which at intervals were numbers of red cells and nuclear fragments. The deeper capillaries were irregularly but intensely injected. The epithelial cells in the lowermost glandular tubules were apparently well preserved or slightly swollen and granular. The lung showed innumerable intra-alveolar hemorrhages in scattered groups.

Case 2.—*History.*—A man, aged 54, who was admitted to Bellevue Hospital, Jan. 26, and died Feb. 3, 1920, stated that eight days before admission he had a chill followed by a splitting headache, but that previous to that time he had been feeling quite well. Three days later he was told that he "looked yellow"; and five days after this, when he was admitted to Bellevue Hospital, the conjunctivae and the skin of the entire body were deeply jaundiced. Just before admission the patient suffered a severe attack of epistaxis, and bleeding was still in progress on his arrival at the

hospital. The patient was languid, and there were small submucous hemorrhages in the lips and soft palate, and many punctate or slightly larger hemorrhages in the skin of the face. The epigastric and right upper regions of the abdomen were tender and resistant to palpation. For four days after admission the patient's temperature was normal. On the evening of the fifth day it was 103 F., and registered between 101 and 103 F. every evening thereafter until death. There was a well marked friction rub over the right side of the chest between the sixth and ninth ribs that became audible on the seventh day. The white cells numbered 24,000. The urine contained albumin, granular casts and bile. The day after admission the patient passed a tarry stool which responded to the guaiac test for blood. The Wassermann reaction was negative.

Necropsy.—The body was markedly jaundiced. There were several hemorrhagic specks in the region of the lips, and numbers of subendocardial hemorrhages. The mucosa of the stomach, duodenum and the first half of the jejunum was swollen, greyish green and gelatinous, bathed by a thin milk-like fluid. Pressure on the gallbladder was followed by the escape of bile through the duodenal papilla. The liver was about normal in size, bile stained, but otherwise showing no naked eye changes. The gallbladder was slightly distended by viscid bile. The right lung was the seat of a confluent lobular pneumonia, and abundant semipurulent fluid exudate was present in the corresponding pleural cavity.

Microscopic Examination.—Histologically, the most severe changes were apparent in the gastro-intestinal mucosa and in the kidneys. In the stomach and duodenum the mucosa was extensively necrotic. In places destruction of tissue was superficial, but at times practically the whole of the glandular layer was converted into pinkish-staining, structureless débris, in the tissues beneath which the capillaries were irregularly injected and distended. In the kidney the cells of the tubules, particularly in the cortex, were almost completely necrotic and were extensively desquamated and bile stained. Small hemorrhages were visible at intervals. The liver presented marked signs of cloudy swelling with dissociation of cells, and jaundiced areas were numerous, especially around the central veins, where many of the cells were undergoing necrosis.

CASE 3.—*History.*—A man, aged 60, who was admitted to Bellevue Hospital, Dec. 18, 1919, and died, Jan. 1, 1920, stated that for three weeks previous to admission he had been "feeling mean" because of general lassitude and aches and pains. His mental condition was such, however, that it was impossible to obtain an intelligent history. At the time of admission he was very irritable, but icterus was not apparent. On the second day after admission a yellowish tinge was noted in the sclerae, the next morning jaundice was distinct and the following day it was marked; hemorrhagic herpes appeared about the mouth, and epistaxis occurred. The patient was now extremely prostrated, irrational or stuporous by turns, and numbers of minute hemorrhages appeared in the skin. The edge of the liver was felt and the organ was tender, so much so that abscess was suspected. In the next two or three days, innumerable hemorrhages occurred in the skin, particularly in the line of scratch marks, and jaundice became extreme. The stools were clay colored. On admission the patient's temperature was 102; it rose to 104 F. on the second day, and by the fifth it fell to normal, after which it was subnormal until death, which occurred eleven days after admission. The leukocytes numbered 11,000. The urine contained albumin, casts and bile. The Wassermann reaction was negative.

Necropsy.—In addition to jaundice and superficial hemorrhages, necropsy revealed multiple hemorrhagic foci in the lungs. The liver was normal in size and consistency, and its icteric lobules stood out distinctly. Bile was expressed through the duodenal papilla, and no obstruction was apparent in or around the larger ducts. The gallbladder was slightly distended by thick, dark green bile. The mucous membrane throughout both the stomach and intestine was swollen and greenish gray. The kidneys showed no noteworthy naked eye changes.

Microscopic Examination.—The liver cells were swollen and cloudy and, in the immediate vicinity of the central veins, crowded with bile. There was marked granular degeneration of the tubular epithelium of the kidney and injection of its smaller blood vessels. The gastro-intestinal mucous membrane showed advanced and widespread alterations. The lowermost glandular tubules were well preserved, but at about the middle of the mucosa became transformed into a jumble of cells, many of which contained pycnotic nuclei, others nuclear fragments. The uppermost layer of the mucosa was converted into dull pinkish-staining débris and showed frequent signs of exfoliation of large masses of dead material. The capillaries in the submucosa were richly injected by red cells.

CASES WITH DIFFUSE NECROSIS OF THE LIVER

CASE 4.—*History.*—A boy, aged 16, who was admitted to the Psychopathic Pavilion, December 24, and died the following day, had complained of "stomach trouble" ten days previously, vomited, and turned yellow, according to the report of members of the family. Two days prior to admission he became acutely ill, excited and delirious. He was admitted in restraint, extremely restless and excited. Jaundice was intense, the tongue foul, the teeth covered by sordes. The patient soon lapsed into coma, and just before death the temperature registered 108 F.

Necropsy.—The body was deeply jaundiced. Hemorrhages were apparent in both upper eyelids, in the mouth and beneath the visceral pericardium and pleura and in the substance of the lungs. The liver appeared to be normal in size, its form was preserved, the capsule smooth, and the substance unchanged as far as the naked eye could detect, except that it was diffusely yellow. The gallbladder contained a very small quantity of thin, light colored bile. The kidneys and gastro-intestinal mucous membrane showed no naked eye alterations other than jaundice of the former. The brain was slightly congested. Cultures from the spleen remained sterile.

Microscopic Examination.—Destructive changes in the liver were so widespread and severe that, in sections stained by hematoxylin and eosin, it was not easy to identify the organ. In sections stained by the method of Van Giesen it was seen, however, that the perilobular connective tissue was well preserved or slightly more cellular than usual, and that it supported intact blood vessels together with large numbers of bile canaliculi, the lining cells of which were apparently only slightly changed. In frozen sections stained by sudan III, individual liver cells or small groups of cells crowded with fat globules were strewn through the periphery of the lobule, an occasional cell being more centrally placed. Otherwise the cells lying between the perilobular connective tissue and the central vein were converted into a mass of structureless material consisting of wrinkled, collapsed and ruptured cell membranes, nuclei in various stages of disintegration, granules of bile pigment, and free red cells arranged diffusely or in minute clumps and streaks.

The epithelial cells in the convoluted tubules of the kidney were swollen, opaque and granular, their nuclei obscured. In practically all the tubules the swelling was such as almost completely to obliterate the lumen. The tufts were bloodless and were composed of collections of nuclei of different shapes and sizes arranged without any semblance of order and lying in a pinkish, opaque matrix. In the cortex small hemorrhages were visible, while near the apexes of the pyramids were large extravasations. The lungs showed innumerable discrete and confluent intra-alveolar hemorrhages; in still other alveoli were dense collections of polymorphonuclear leukocytes. The spleen was congested, and the lymphoid follicles were centrally necrotic.

In some places the mucous membrane of the gastro-intestinal tract was well preserved, in other places it showed necrosis, sometimes involving the uppermost layers, at other times extending to the muscularis. The necrotic portions were represented by pinkish-staining granular débris, scattered through which were glandular remnants, red cells, nuclear granules and an occasional collection of lymphoid cells.

Chemical examination of the liver for phosphorus was negative.

CASE 5.—*History.*—A man, aged 31, who was admitted to Bellevue Hospital, January 8, and died the same day, was profoundly stuporous and could not be roused. The entire body was deeply jaundiced. The patient's temperature was 103 F., pulse 135. Otherwise nothing could be learned of him.

Necropsy.—The skin was deep saffron yellow, and the visible mucous membranes were intensely icteric. There were numerous hemorrhagic extravasations in the omentum, mesentery and parietal peritoneum, pleurae and lungs, spleen and brain. The kidneys were congested and jaundiced, changes which were shared by other of the great viscera. The mucosa of the gastro-intestinal tract was bathed in yellowish chymelike material, but otherwise revealed no changes to the naked eye. The liver was markedly diminished in size, weighing 1,040 gm. The consistency was slightly softer than normal, the capsule thin, the color an intense saffron yellow with fine nutmeg markings. The gallbladder contained a small amount of blackish green bile and the duodenal papilla was permeable.

Microscopic Examination.—The histologic changes were essentially the same as those described in the previous case, namely, cloudy swelling of the kidneys, hemorrhages into the spleen and lungs, the latter associated with a lobular exudative pneumonia, superficial or diffuse necrotic lesions in the gastro-intestinal mucous membrane alternating with better preserved areas, and almost complete destruction of the liver. Sudan III and Van Giesen preparations showed changes not to be distinguished from those described in the preceding case—preservation of the interlobular connective tissue with its bile canaliculi and blood vessels, scattered groups of fat-containing cells near the edges of the lobules, and complete disintegration of the remaining cells with numerous hemorrhages.

Chemical examination of the liver for phosphorus was negative.

CASE 6.—*History.*—A man, aged 21, who was admitted to the Psychopathic Pavilion, February 18, and died the following day, had worked Monday, the 16th, according to a statement of his brother. Tuesday he complained of having a cold, and Wednesday he became raving. On admission he was intensely agitated, shouting and resisting all efforts to care for him, trying to bite nurses and attendants. At this time he was slightly jaundiced, but in the succeeding twenty-four hours icterus became extreme.

Necropsy.—In addition to the intense jaundice, there were numerous hemorrhages into the lungs and spleen, and a massive extravasation into the soft tissues around the pancreas. The kidneys were swollen and icteric. The mucosa of the stomach appeared to be atrophic and irregularly congested, but otherwise no changes were apparent to the unaided eye. The liver was greatly reduced in size and weighed 890 gm. It was flabby, but increased in consistency, being almost leathery to the touch. Scattered beneath the capsule and throughout the substance were hundreds of irregularly outlined hemorrhages, between which the liver tissue was ochre-yellow and opaque. The gallbladder contained a few cubic centimeters of thin, light colored bile. The pia arachnoid was congested, but the substance of the brain was apparently normal.

Microscopic Examination.—To describe the histologic changes in this case would be a virtual repetition of what has been said of the preceding two cases, including the necrotic changes in the gastric mucosa and the widespread destruction of the liver lobules, although, in the latter situation, hemorrhages were far more frequent and extensive.

Chemical examination of the liver for phosphorus, antimony, arsenic, mercury and tin was negative. Blood removed at necropsy was injected into guinea-pigs with negative results.

SUMMARY AND CONCLUSIONS

1. There is a variety of epidemic jaundice attended by spontaneous or easily induced hemorrhages in the skin, mucous and serous membranes, viscera, and various soft tissues, by mental symptoms ranging from stupor to wild delirium, by clay colored stools, pain and tenderness differing in location and intensity, sometimes by vomiting and diarrhea, with or without elevation of temperature (the latter, when present, being due, apparently, to intercurrent conditions, such as bronchitis and pleuritis) and, finally, by such incidental phenomena as muscular twitchings and itching of the skin. The mortality is high. The disease lasts from a few days to two or three weeks, depending, in large measure, on the extent and severity of the necrotic changes in the liver. In the relatively small number of cases that we have seen at Bellevue Hospital it was noted that those corresponding to acute yellow atrophy of the liver and accompanied by violent mental disturbances occurred in young persons, while the more prolonged cases associated with stupor were found after the fiftieth year of age. All the cases that we have seen were in male patients.

2. Anatomically, in addition to jaundice and hemorrhages, the disease is characterized by cloudy swelling or even necrosis of the tubular epithelium of the kidneys, by cloudy swelling of the liver with or without dissociation of cells and foci of icteric necrosis, or by widespread necrotic changes corresponding in all essentials to those commonly described as acute yellow atrophy of the liver, and by diffuse or scattered superficial or deep areas of coagulation necrosis in the gastro-intestinal mucosa. In the more prolonged cases, changes in the gastro-intestinal tract are evident to the unaided eye; in the rapidly fatal cases no alterations in this locality are discernible to the naked eye, and it remains for microscopic investigation to disclose them.

3. The disease is not transmissible to guinea-pigs by intraperitoneal inoculation of blood or urine, and is probably not of spirochetal origin, but a manifestation of toxemia of unknown nature. Phosphorus and other heavy metals are not detectable on chemical examination of the necrotic livers. The structural alterations in the gastro-intestinal tract indicate that the provocative agent gains entrance through this channel. The necrotic changes in the liver in those cases that resemble acute yellow atrophy suggest that the toxic substance is absorbed from the gastro-intestinal tract into the tributaries of the portal vein, since the dead liver tissue corresponds quite definitely to the distribution of the portal blood, the lobules being totally destroyed, while the interlobular structures, including blood vessels and bile canaliculi, remain relatively well preserved. Jaundice seems to be due to inability on the part of the bile to escape from its intrahepatic capillaries, since there is no demonstrable obstruction in the larger ducts, microscopically or otherwise. The hemorrhages probably depend primarily on injury to the capillary endothelium brought about by the action of bile salts and encouraged by diminution in fibrinogen due to destruction of liver substance.

4. The association of intense jaundice with clay colored stools, and pain and tenderness in the region of the gallbladder and liver, has occasionally prompted surgical intervention. The occurrence of the disease in epidemic form, and the presence of more or less profuse hemorrhages in or from the skin and mucous membranes, should serve to arouse caution in the interpretation of symptoms that otherwise are suggestive of remediable obstruction to the escape of bile.

400 East Twenty-Ninth Street.

OCCLUSION OF THE RIGHT POSTERO-INFERIOR CEREBELLAR ARTERY

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The literature on the subject of occlusion of the postero-inferior cerebellar artery records the fact that the syndrome brought out by occlusion of this vessel corresponds very closely to that found in occlusion of the vertebral artery. Occlusion of the basilar artery may also produce a similar syndrome.

The patient whose history and symptoms I record has in the main recovered from the attack, so that the clinical diagnosis cannot be verified.

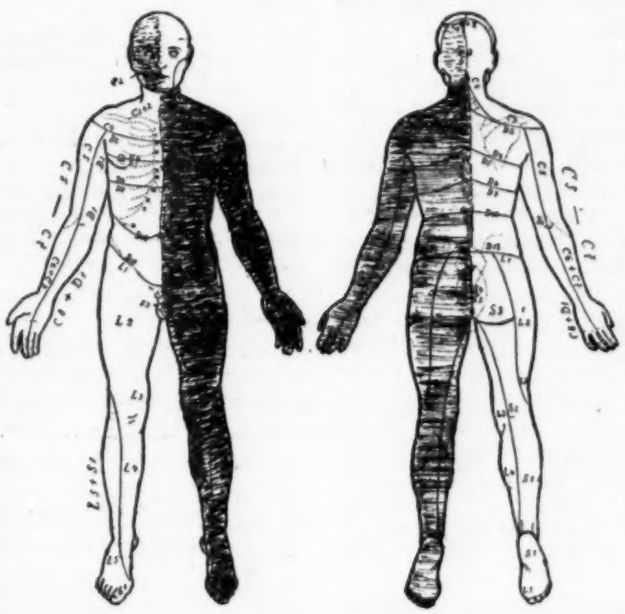
Breuer and Marburg[1] show that clinically and experimentally the differential diagnosis between occlusion of the postero-inferior cerebellar artery and the vertebral artery cannot be made with certainty. In one of their cases the vertebral artery was occluded and the postero-inferior cerebellar artery escaped, and yet the lesion occupied about the same region as in cases in which the postero-inferior cerebellar artery was occluded. If pontile symptoms are present, according to these authors, the vertebral artery rather than the postero-inferior cerebellar artery is probably the seat of the lesion.

REPORT OF CASE

History.—S. M., man, aged 35, chauffeur, referred to me by Dr. H. G. Dern, Nov. 25, 1919, said that while on his way to work about October 1, he suddenly became dizzy and fell to the ground, but did not lose consciousness. He was taken home and put to bed. When Dr. Dern first saw him he said he had vomited several times during the day. On examination at that time the physician observed the presence of a horizontal nystagmus; also when the patient attempted to bring a glass of water to his mouth with his right hand, marked ataxia was present. He had similar ataxic movements of the right leg on attempting to walk. There were no such movements of the left arm or left leg. The patient was hoarse and talked almost in a whisper for a period of four or five days. There was no dyspnea. The pulse, however, was very slow for several days.

About one week after the onset of the attack the patient noticed while walking along the sidewalk there was a constant tendency to deviate to the right, and before he realized it he was off the sidewalk. The dizziness improved, the ataxia got better, the vomiting ceased, and at the end of ten days or two weeks the patient was walking around the house and was feeling very well, as he expressed it. His condition then remained stationary until November 15, when while taking a walk he suddenly became dizzy and would have fallen had not an adjoining wall supported him. He was able to get back upstairs alone. His dizziness gradually improved until November 25, the date of his entrance to St. Luke's Hospital.

There was no history of any previous illness. He had never undergone any surgical operation. He denied syphilis or other venereal infection. His family history was entirely negative.



Areas (indicated by shading) in which there was loss of the sense of pain and temperature.

Examination.—I found the head slightly tilted toward the right. The patient had a tendency to go to the right when walking. Both pupils reacted to light and accommodation. The right pupil was smaller than the left. The palpebral fissure on the right side was narrow, and an apparent enophthalmos was present on the right side. Horizontal nystagmus was present but not marked. The optic disks were normal, and no other ocular paralysis was observed. There was no deafness. The facial muscles on the right side showed slight weakness, but were apparently normal on the left side. There was no deviation of the jaw on opening the mouth. On protruding the tongue there was noticeable a slight atrophy of the right side of the tongue. The palatal muscles and the larynx were negative. There was no lagging of either vocal cord. The heart action was normal. The respiratory tract was negative. The deep reflexes were normal except that the right knee jerk and the right Achilles were slightly decreased. The abdominal reflexes were present but decreased. The sensory findings showed a loss of pain and temperature sense and to a less extent tactile sense on the right side of the face, corresponding to the distribution of the sensory portion of the fifth nerve and more pronounced over its upper branches. There was a patch of herpes at the edge of the right naris. The right side of the face did not perspire, while the left side showed a profuse perspiration. A pin prick caused bleeding on the left side of the face very easily, indicating a vasomotor disturbance. There was no disturbance of sensation on the left side of the face. Posteriorly over the scalp, the region supplied by the cervical plexus on the left side, sensation was dull to the pin prick. Beginning in the region of the clavicle and involving the entire left side of the body there was a loss of pain and temperature sense only. The tactile and position senses were preserved on both sides of the body. There were no bladder or rectal disturbances. The systolic blood pressure was 120, diastolic, 80. The Wassermann reaction was negative with both blood and spinal fluid. The vestibular apparatus was carefully tested by Dr. Frank Brawley, who reported:

"Complete test of the vestibular apparatus indicates a lesion of the right side of the brain stem, which almost completely blocks the responses from the horizontal and vertical canals and both raphes of Deiter's nucleus. There are disturbances in the responses from the left side also, probably due to pressure. The areas involved correspond to the location of the postero-inferior cerebellar artery, but cover a greater area than Louis Fisher's[2] case."

COMMENT

While no definite etiology is given in this case, Salmon[3] states that 88 per cent. of the cases of thrombosis of the postero-inferior cerebellar artery occur in alcoholics or syphilitics. The characteristic symptoms, as stated by this author, include those recorded in this case. He also makes the statement that the symptomatology caused by thrombosis of the vertebral artery is analogous to that of thrombosis of the postero-inferior cerebellar artery. In one case he noticed disturbances of deglutition and paresis of the facial

1. Breuer and Marburg: Obersteiner's Arbeiten **9**: 181, 1902.

2. Fisher, Lewis, quoted by Jones: Equilibrium and Vertigo.

3. Salmon, A.: La trombose della arterie bulbari, Riforma med. **29**: 649, 1913.

muscles on the side of the lesion, transitory diplopia, and especially the sympathetic syndrome, as shown in this case, namely, enophthalmos, and narrowing of the pupil and of the palpebral fissure on the side of the lesion.

Spiller [4] has recorded the same syndrome, and states that it is not present in all cases.

A perusal of the literature discloses no previous reports on the testing out of the vestibular apparatus, except by Fisher, as stated in Brawley's report. In Fisher's case there is shown involvement of the horizontal canals without involvement of the vertical canals. He arrives at the conclusion that the anatomic arrangement is such as to bear him out in the statement that the normal connections leading from the horizontal canals to the vestibular apparatus through the inferior peduncle to the cerebellum are blocked, whereas the fibers from the vertical canals through the middle cerebellar peduncle to the cerebellum are not damaged.

In studying the symptoms from the standpoint of cranial nerve involvement, we find that the sensory portions of the fifth, sixth, seventh, eighth, ninth, tenth, eleventh and twelfth nerves have all been recorded in one report or another as having been involved, but not all have been involved in any one case. The spinal or sensory root of the fifth nerve on the side of the lesion has been involved in every case reported. That the sixth nerve, when involved, usually shows a transitory involvement, as evidenced by the temporary diplopia, and the paresis of the face on the side of the lesion, has been noted in a few instances. Vestibular symptoms due to involvement of those fibers entering the inferior peduncle especially are present in all the cases reported. Difficulty in deglutition, transitory in some cases and persistent in others, is very common. Paresis of one vocal cord producing temporary hoarseness may be present, and slowing of the pulse, most frequently transitory, has also been noted in a few cases. Slight hemiatrophy of the tongue on the side of the lesion, as shown in this case, has not, so far as I can learn, been previously referred to in the literature. However, Wallenberg [5] speaks of a slight paresis of the hypoglossal due to a lesion in the most laterally situated roots of the hypoglossal nucleus.

The sympathetic syndrome is a common symptom, and can be explained on the location of those fibers in the medulla which are in close proximity to those for pain and temperature, and are also situated near the spinal root of the fifth nerve in the dorsolateral portion of the reticular substance. The fibers for the tactile and position sense are more laterally located in this region and consequently escape injury.

It might be well to add by way of explanation that the fibers for pain and temperature sense located in this region of the medulla supply the opposite side of the body, which accounts for the clinical distribution of such disturbances.

The ataxia, vertigo and asynergy are cerebellar in character and consequently homolateral, owing to the constant involvement of the inferior cerebellar peduncle and Deiters' nucleus, which have to do with equilibrium through the spinal and vestibular connections with the cerebellum.

Wallenberg states that when difficulty of deglutition is present and persistent, both the vertebral and inferior cerebellar arteries are involved, while transitory paralysis of deglutition may be caused by involvement of the postero-inferior cerebellar artery alone. He injected the postero-inferior cerebellar artery and traced its course. He found that frequently there is only one postero-inferior cerebellar artery, and then it is usually the left. Several smaller arteries take the place of the missing cerebellar artery in such instances, and a large antero-inferior cerebellar artery replaces the missing posterior cerebellar artery.

While cases presenting the symptoms usually observed in occlusion of the postero-inferior cerebellar and posterior vertebral arteries are not so uncommon, yet at the same time the cases are so rare that the attention of the general practitioner is not attracted in a way to impress him with the frequency of this syndrome.

4. Spiller: J. Nerv. & Ment. Dis. **35**: 365, 1908.

5. Wallenberg: Anatomischer Befund in einem als akute Bulbaraffection . . . beschriebenen Falle (Embolie der Art, cerebellar. post.-infer. sinistra), Arch. f. Psychiat. **34**: 923-959, 1901.

CONCLUSION

1. There is a constant syndrome producing disturbances in sensation over the distribution of the fifth nerve on the side of the lesion, with disturbances of the pain and temperature sense on the opposite side of the body.

2. There is a definite sympathetic involvement of medullary origin producing enophthalmos, narrowed pupil and narrow palpebral fissure on the side of the lesion.

3. In some cases the symptoms are more widespread than in others, as in this case, and present a slight hemiatrophy of the tongue on the side of the lesion.

4. Examination of the vestibular apparatus reveals certain definite localizing symptoms on the side of the lesion.

5. The occlusion of the postero-inferior cerebellar artery and the vertebral artery may present practically identical symptoms, so that clinically one cannot be sure whether he is dealing with an occlusion of one or the other artery.

104 South Michigan Avenue.

VENEREAL CAMPAIGN IN PARIS DISTRICT OF THE AMERICAN EXPEDITIONARY FORCES

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Since the cessation of hostilities, numerous papers have appeared [1] dealing in general and in particular with the results obtained in the venereal disease campaign in the American Expeditionary Forces. Nowhere was there a graver problem to be faced, and nowhere were more interesting results achieved than in Paris, the Mecca of every American in France.

The Paris district included the city of Paris itself and the country included in the province of Seine et Oise, which completely surrounds Paris, an area, roughly, of 400 square miles. Until January, 1918, Paris was the headquarters of the service of supply, with a permanent strength of from 2,000 to 4,000 men. In spite of the fact that the headquarters of the service of supply was moved to Tours in January, the permanent personnel of the district grew apace

1. Young, H. H.: Preventive Medicine as Applied to Venereal and Skin Diseases, J. A. M. A. **73**: 1668 (Nov. 29) 1919 (complete article in Tr. Sect. Urol., 1919, p. 202). Ashburn, P. M.: Factors Making for a Low Venereal Record in the American Expeditionary Forces, J. A. M. A. **73**: 1824 (Dec. 13) 1919. Davis, D. M.: A Campaign Against Venereal Disease in the Army of Occupation, J. A. M. A. **74**: 223 (Jan. 24) 1920.

with the American Expeditionary Forces at large, until, for the latter half of 1918 and early part of 1919, it averaged from 17,000 to 22,000 men. About one half of these men were stationed in Paris proper, the other half in the immediate environs or the surrounding country. No point in the district was farther away from Paris than 30 miles: the city was therefore easily accessible to all.

In addition to the permanent personnel there was always a large floating population of troops of the American Expeditionary Forces made up, until after the armistice, of casuals en route through the city, men absent without leave, and during the two months of the Marne-Vesle battles, about 1,000 men a day on short leave from the six American divisions at the front. Jan. 22, 1919, three days' leave to Paris was formally opened. Thereafter, an average of 1,500 men arrived daily. No accurate data are available as to the exact census of casuals in Paris, but it was estimated by the provost marshal that the daily floating population after July, 1918, was between 5,000 and 10,000.

Until March, 1918, no organized plan for handling the problem in Paris existed; and the inevitable result was an appallingly high rate per thousand, as shown in the accompanying chart. It can probably be said without fear of dispute that the rate of 480 per thousand troops, attained in January, 1918, was the highest ever reached in any part of the American Expeditionary Forces. In March, 1918, the plan of organization devised by Col. Hugh H. Young, senior consultant urologist to the American Expeditionary Forces, of placing with each combat division a trained urologist to care for the prevention and treatment of venereal disease, was extended to other areas of France, particularly the service of supply, and I was appointed urologist to the district of Paris.

METHODS OF FACING THE PROBLEM

The available methods of attack with which to face the problem were:[2] (1) to diminish the number of contacts by placing out of bounds houses of prostitution and areas frequented by street-walkers; (2) to cooperate with the French in the detection and treatment of infected women; (3) to eliminate, so far as possible, the factor of alcoholism by placing out of bounds cafés which sold liquor to Americans; (4) to make use of all measures of social hygiene in an effort to diminish contacts; (5) to provide, by means of a sufficient number of adequately staffed prophylactic stations, sufficient opportunity for the prevention ("early treatment") of venereal disease; and by careful physical inspections of all troops, for its early detection; (6) court martial for all men having contracted a venereal disease, and, (7) treatment of disease with the organization so that as little time as possible would be lost from military duties; and at the same time, segregation of all infected patients, to prevent the further spread of infection.

REPRESSION

The primary object of any military venereal disease campaign is, of course, to cut off infection at the source by diminishing contacts. The most effective measures to accomplish this are the first three just outlined. In Paris, however, these measures were utterly out of the question. Prostitutes were present in enormous numbers, and were, as a rule, exceedingly aggressive. They preferred Americans to the soldiers of any other nation because of the higher pay which the doughboy received. There are few houses of prostitution, about forty in all, with a total of only 400 inmates. The overwhelming majority of the estimated 75,000 prostitutes in Paris are street-walkers, either professional or clandestine. All women in houses are licensed by the police and inspected bimonthly by police physicians (a method which, as Flexner[3] and later observers have demonstrated, does not decrease the risk of infection); of the street-walkers only about 5,000 are licensed and inspected. The remaining 70,000, including practically all the clandestine prostitutes, are without supervision or control of any sort, and are permitted to remain undisturbed by the police so long as they are not too publicly offensive. Solicitation is the rule, and is carried on much more publicly than anywhere in this country. There are about 2,500 small hotels, any of which, as well as some of the more expensive and fashionable, are available as houses of assignation.[4]

Identification by a soldier of the source of his infection was in practically every case impossible, since usually he did not discover the name or address of his partner. So far as alcohol was concerned, the situation was precisely similar to that of prostitution. Many of the city's several thousand cafés were designated as out of bounds by the provost marshal, but no number of military police would have been sufficient to enforce the order. It may be considered that alcohol in any form was freely accessible to those who wanted it. Even under these "wide open" conditions it is felt that the use of alcohol played little part in the incidence of venereal disease among Americans.

It was at once apparent, then, that contacts could not be decreased by repression, as had been done with such remarkable success elsewhere in the American Expeditionary Forces, notably at some of the base ports.[2] It was useless to place houses of prostitution out of bounds, when such an abundance of prostitutes flourished on the streets. One could not designate certain streets or areas as forbidden to Americans because every street, no matter how small or how distant from the center of the city, was used by these women. In the same way, hotels and cafés could not be placed out of bounds, because, with very few exceptions, every hotel in Paris was available for use by couples without baggage, and every café was willing to sell whisky to Americans.

SOCIAL HYGIENE AND DISCIPLINARY MEASURES

Since it was impossible because of the circumstance of location to employ these powerful weapons, we were forced to rely, for the purpose of diminishing contacts, on measures of social hygiene and on the application of such disciplinary measures as could be accomplished. In March, 1918, the campaign was begun, with results that are strikingly shown in the accompanying chart. Within three months the incidence rate per thousand had been cut almost in half.

In the chart the annual rate per thousand was estimated by dividing the number of cases during a given period by the number of men in the command (which

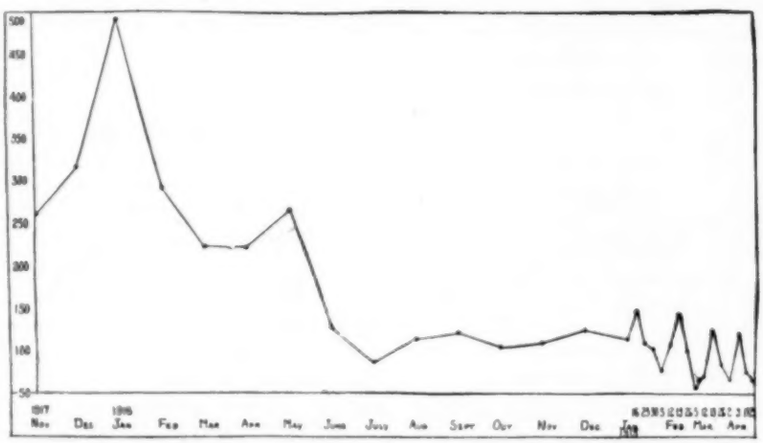
2 Young, H. H. (Footnote 1).

3. Flexner, Abraham: Prostitution in Europe, New York, Century Company, 1914.

4. Robinson, Daisy M.: Personal communication to the author. Dr. Robinson carried out during 1918 a most extensive investigation of the situation in Paris, and I am indebted to her for full and accurate data regarding the matters in this paragraph.

gave the rate for the period only, not for the year), and then by multiplying this result by the fractional part of a year which the period represents. Thus, if four cases occurred among 1,000 men in one month, the monthly rate was 4 per thousand, but the annual rate was 48 per thousand. From November, 1917, to December, 1918, the rate was computed by the month; thereafter it was computed by the week.

The period from November, 1917, to March, 1918, illustrates the high incidence rate attained when no special campaign was in force; the drop in the rate to one-half its previous figures in June, 1918, illustrates the results obtained when the measures inaugurated in March had begun to tell. The preliminary rise in May, 1918, is due to the uncovering of additional cases by active enforcement of the physical inspection order. There is a sustained level at about 110 per thousand, with a gradual rise at and following the armistice (November, 1918). The further lowering of the average rate during 1919 to about ninety-five per thousand is due to increased facilities for and more care in administering prophylaxis. The peaks of January 16, February 19, March 19, and April 9 are the results of pay day.



Annual venereal disease rate per thousand troops, Paris district of the American Expeditionary Forces, from November, 1917, to April 23, 1919.

The factors which accomplished this decrease in the rate are worth detailing briefly. A campaign of education was begun, consisting of lectures to men and officers, and the liberal use of the U. S. Public Health Service film, "Fit to Fight." Lectures to the men were repeated until they had been told of the various military angles of venereal disease by medical officers, line officers, and most important of all, trained noncommissioned officers, who were better able to reach the level of the men than the average officer. It was found, with much surprise, that an overwhelmingly large proportion of the men had received no instruction whatever on the venereal disease question before coming to France.

Through the cooperation of the various relief organizations, chiefly the Young Men's Christian Association, the Red Cross and the Knights of Columbus, efforts were made to provide enough recreational activities for the men to keep them off the streets. By the time the armistice was signed, the Y. M. C. A. alone had, in addition to its various canteens and hotels for officers and enlisted men, three large halls, capable of accommodating 14,000 men, in which vaudeville, moving pictures, boxing matches, dances, etc., were given nightly.

These measures accomplished something, but not enough. Many soldiers, even though thoroughly instructed in venereal disease matters and fully provided with the opportunity of Y. M. C. A. and Red Cross entertainment, were obstinate in preferring the society of women of the Paris streets. For this class, it was necessary to institute disciplinary measures. This was complicated by several factors: 1. The soldiers in Paris were, for the most part, soldiers in name only, since most of them were highly skilled office or technical workers, whose day was entirely taken up by routine duties, uncomplicated by drills or other military inconveniences. Thus they were as a whole unaccustomed to and intolerant of restrictions or discipline. 2. They were divided into small detachments, often commanded by officers whose prime interest was technical work, who came into contact with their men only during office hours, and who, being uninterested in discipline for themselves, were careless of the welfare of their men. As a result of this, the general custom was that after the day's work was done, the soldier's night belonged to him, to do with as he would. 3. Detachments were widely scattered in various large or small barracks, so that just after the armistice, 125 detachments lived in fifty-two different places. As for the floating personnel, they were usually left entirely to their own resources and were wholly beyond the reach of officers or discipline.

Owing to these facts, the "all night leave," with its consequent multiple exposures and failure to use prophylaxis until from twelve to fourteen hours after the first intercourse, was a tremendous evil. In June, 1918, over one half of all prophylactic treatments were taken after all night exposures. The question then became one of preventing men from being on the streets all night. In those camps or barracks situated outside the city, the commanding officer was requested to allow his men leave to Paris only once a week, and to insist that they return by midnight. In the city itself, all troops were required to be in their barracks by 9 p. m., unless furnished with a pass to visit a designated place of amusement. Enforcement of these seemingly stringent measures was accomplished by roll calls in all barracks, when every man must be present or accounted for, and by the cooperation of the military police, who were required to examine passes of all men found on the streets after 9 p. m. Rigid enforcement of General Pershing's admirable General Order 77, 1918, was insisted on, especially those points relating to the questioning of all men returning from pass by a guard as to exposure, with compulsory prophylaxis if exposure was admitted, and compulsory prophylaxis without regard to exposure if a man returned intoxicated.

Every effort was made to stimulate a feeling of organization pride and competition. A copy of the weekly venereal disease report was sent to the commanding officer of each organization, with the request that it be posted on the bulletin board where all ranks had an opportunity to see "just where their outfit stood." When all of these methods failed, and an organization had a persistently high incidence rate,

recommendations were sent to the commanding general that all pass privileges for its men be suspended for a given period. This was frequently done with a most salutary effect. With several detachments of negro troops situated outside the city, it was found necessary to adopt the measure instituted by Col. George Walker at one of the base ports—that of compulsory prophylaxis for every negro soldier each time he reentered the camp after leaving it, without reference to whether or not he admitted exposure.

Bimonthly physical inspections were thoroughly carried out, in conjunction with the district dermatologist. A great deal was accomplished by these means. The rise in the rate for May, 1918, shown in the chart, is directly due to an increase in the number of inspections and to more care used in making them.

All of the disciplinary measures outlined failed somewhat in the accomplishment of their purpose so long as troops remained widely scattered in small detachments. The length to which this practice had gone is exemplified by one organization, whose 150 men were quartered in twenty-five different places all over the city. The remedy for this was concentration. The ideal solution would have been one large camp, in which all men and officers could be quartered. Unfortunately, for many reasons, the ideal or anything closely approaching it was wholly impossible. Some progress was nevertheless made, in spite of seemingly insuperable difficulties, and by February, 1919, about 10,000 men (approximately one half of the strength) had been concentrated in eight large barracks. In all of these places it was possible to institute proper pass regulations to obviate the "all night evil," and to insure prompt administration of prophylaxis.

PROPHYLAXIS

When the incidence rate had reached a stationary level at about 110 per thousand, it became obvious that exposures could not be decreased much below this point, no matter what social and disciplinary measures were applied. Matters would have thus stood at an impasse had it not been for prophylaxis. The feeling grew that if prophylactic treatment could be made more efficient and more widely available, and that if more men could be persuaded or forced to use it, the rate could be still further lowered. Moreover, for the large group of casuals and leave men, none of the foregoing measures were applicable, and from the first our whole reliance had perforce to be placed on prophylaxis.

In order to make the treatment easily available, stations were opened in every barracks which housed more than fifty men, in the two officers' hotels, all the Y. M. C. A. and Red Cross hotels used for casuals, and in a large building centrally located near the Opera and especially rented and equipped for the purpose. Knowledge of the location of the stations was disseminated to permanent troops through bulletin boards, and to incoming casual troops by cards distributed at all the railroad stations, which cards also contained warnings of the prevalence and danger of venereal diseases and advised continence as the only sure preventive. All military police on street patrol were furnished with a complete list of stations, and each man required thoroughly to familiarize himself with the location of the station nearest to his beat, so that inquiries could be promptly and properly answered. The magnitude to which this work grew can be seen by the fact that in March, 1919, there were in the district seventy-two prophylactic stations, which gave a weekly average of 5,000 treatments. I have at hand the statistics of 95,916 treatments given in a period of a little more than twelve months.

The number of stations being sufficient to care for all needs, the quality of the treatment administered was the next point to be considered. All attendants were carefully trained, and their records of successes and failures were checked up weekly. Daily inspections of all stations were carried out by a sergeant, and weekly inspections by a medical officer. The results obtained with their bearing on the venereal disease rate will be fully discussed in another communication.

The application of these measures reduced the incidence rate from a high point of 148 per thousand on January 16 (due to the general rise throughout the American Expeditionary Forces after the armistice), to an average level of 94.6 per thousand for the next fourteen weeks (to April 23, beyond which point I have no figures). The rate for the Paris district after June, 1918, was consistently about four times as high as that for the American Expeditionary Forces as a whole, but was only very slightly higher than that for the regular army in time of peace. Considering the unparalleled situation of our troops in Paris, their freedom from the censorious eyes of home surroundings, and the greatly increased facilities for sexual contact over any other location in France or in this country, the record seems very satisfactory indeed.

TREATMENT

Regarding the treatment of venereal disease in the district, there remains but little to be said. It was impossible to carry out the general plan as originally outlined for combat organizations, of having all patients treated by the organization medical officer, for the reason that most of the organizations in Paris were too small to have a medical officer. For this and other reasons, it was thought advisable to centralize the handling of these cases in the district. In March, 1918, a dispensary was opened in the attending surgeon's office. This rapidly grew to a tremendous size and necessitated expansion of space, which was provided by the Red Cross in American Red Cross Military Hospital No. 9. This hospital was the only one in the American Expeditionary Forces devoted entirely to the handling of venereal (and skin) disease. It contained only seventy beds, by far the largest part of the service being ambulatory. The skin service was combined with it, and the dispensary end grew to the size of approximately 500 patients (300 venereal and 200 skin) daily, requiring the service of sixteen medical officers and fifty enlisted men. In the venereal disease outpatient clinic, during twelve months of which I have record, almost 4,000 new patients were seen, thus divided: gonorrhea, 1,667; chancroid, 485; syphilis, 490; nonvenereal, including other types of genitourinary diseases, 1,126, making a total of 3,968.

It was possible by this means to treat practically all of the venereal disease in the district without loss of time from duty, and with more satisfactory therapeutic results than are ordinarily obtained in civilian dispensaries at home, since the patients, being under military control, were forced to return for further treatment whether they desired it or not. The only drawback to this system was that the segregation of infectious cases was not possible except in the case of primary or secondary syphilis, in which an effort was made to hospitalize the patients until they were no longer infec-

tious. As regards the methods employed in treating venereal disease, they were the same as those used elsewhere in the American Expeditionary Forces and are fully detailed in the "Manual of Military Urology." [5]

CONCLUSION

1. By the use of social hygiene and disciplinary measures, the annual venereal disease rate of the Paris district of the American Expeditionary Forces was reduced from an average level of 313.5 per thousand (for the first five months during which no special steps were taken to combat the evil) to a level of 142.4 for the following nine months. If the first two months of this second period are disregarded, since this length of time was necessary for any measures to take effect, the average rate was reduced to 113.6.

2. This figure (113.6 per thousand) represents the lowest level attained by the repressive and substitutive measures outlined. However, during the next four months, by extending the use of, and improving the quality of, prophylactic treatment, a further reduction to an average level of 94.6 per thousand was accomplished, in spite of the fact that during this period the rate throughout the American Expeditionary Forces at large was gradually rising.

3. It is hoped that the various methods employed may prove useful to medical officers in charge of the health of troops, especially when stationed in large cities. Certain of the points mentioned will suggest themselves as available in a campaign against venereal disease in civil life.

316 Professional Building.

NERVE DEAFNESS DUE TO CONGENITAL SYPHILIS IN THREE CHILDREN

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Deafness, or partial deafness, is being more and more often ascribed to syphilis. Inherited or congenital syphilis in infancy and childhood attacks the eighth nerve with great frequency.

The cases reported herewith are remarkable not because syphilis has produced deafness, but because it has attacked all the children of this family in the same manner, every other part of the body escaping except the eighth nerve.

Though the mother has had four self induced abortions (all abortions coming after the birth of these children), the three children were perfectly healthy children at birth, having none of the stigmas of syphilis and they continued so until at least the end of the first year. Owing to the fact that at least a year had elapsed before signs of deafness developed, these are undoubtedly cases of "late hereditary syphilis," and illustrate the accepted idea of the occurrence of deafness late in the disease.

So far as the parents know, no case of deafness had appeared in their families prior to the birth of these three children. The family history is not remarkable except for the important fact that the father admits a genital sore twelve years before. (At first he denied all venereal history.) This sore was treated locally, no internal medication having been given. He denies ever having had a skin eruption. The mother and father both show ++++ Wassermann reactions.

The mother, who, when I first saw her, informed me that she had suffered much from "rheumatism in the chest and sciatica," has since been put on antisyphilitic treatment and has been entirely relieved of what she considered very distressing symptoms.

REPORT OF CASES

CASE 1.—*History.*—I. R., girl, aged 7, born by spontaneous delivery at full term, was healthy at birth, no blemishes were noted, and she weighed between 7 and 8 pounds. She was breast fed until the fifth month, after which she did poorly on a proprietary food. At 1 year she sat up, and at 16 months walked and talked. She "was like a natural child until the nineteenth or twentieth month, and then went back." Otitis media appeared at the seventh month, and pertussis at 4 years. The present illness dates from the nineteenth month, at which time the baby began to point to objects and would no longer pay any attention when spoken to or take any notice of noises. This apparent failure to hear has persisted to the present time.

Examination.—The patient was fairly well developed and apparently mentally alert, but was unable to hear sounds of any sort. She spoke no words, but could write all the letters of the alphabet in large print, though she could not write them in order. The epitrochlear glands were enlarged on the right side, but otherwise the findings were not remarkable. The patient was 47½ inches tall and weighed 39½ pounds. Sept. 10, 1919, the result of a blood Wassermann test was ++++.

CASE 2.—*History.*—E. R., girl, aged 5, born by spontaneous delivery at full term, and breast fed until the ninth month, had pertussis at 2 years, but no other diseases of childhood. She sat up at 7 months, and walked at 13 months, up to which time she was apparently a normal baby. At 13 months, "she seemed to go back and could do nothing." She was never well nourished from this period, and the present illness dates from the thirteenth month. Her history from this point on resembles that of Case 1.

Examination.—She was a fairly well developed child, 43 inches in height, weighing 38½ pounds, and mentally alert. She made known all her desires by motions and sounds, and spoke no words.

CASE 3.—*History.*—G. R., boy, aged 4 years, born by spontaneous delivery at full term, weighed 7½ pounds, was healthy at birth, and was breast fed until the ninth month. He had pertussis at 1 year, the only disease of childhood. He sat up at the sixth or seventh month, walked at 12 months, and could apparently hear at the age of 1 year. He was "like any other child until 1½ years old," after which time he made no progress so far as speech was concerned.

Examination.—The patient was fairly well developed, and mentally quite alert. He did not talk, but made signs quite intelligently, and could carry on a sign language with his sisters. The pupils reacted to light and accommodation normally. He could hear a very loud sound, but paid no attention to ordinary or loud conversation.

TREATMENT AND RESULTS

Each of these children was put on ascending doses of potassium iodid. Jan. 13, 1920, each child was taking 35 grains, three times a day. All of them were having the expected nasal discharge produced by the drug. One half grain of mercury with chalk, three times daily, very promptly caused gastric distress and was stopped for the time.

All three children were brighter and were beginning to hear loudly spoken words. All could hear the ticking of a watch at a few inches; this they could not do when first seen. All were beginning to talk, using such words as mamma, papa, yes, no, pie, and a few others; and they were learning new words rapidly. When

5. Young, H. H.; Keyes, E. L., Jr., and associates: Manual of Military Urology, Paris, Masson et Cie, 1918.

spoken to in a fairly loud tone, the children immediately paid attention, showing that they could hear. The first patient had grown ½ inch and had gained 5 pounds. The second patient had grown ½ inch, and gained 3½ pounds. The third patient had grown 1½ inches, and gained 4 pounds.

The general result has been good, but the question that must be answered to the parents is, What will be the final result? I believe that little may be promised as to the recovery of the sense of hearing. Such patients show slight improvement if any, an irremediable damage having already been done by the time these patients are brought to one's attention. Further care of these children should provide for their education in a proper institution. They will also be put on inunctions of mercury, and the routine antisyphilitic treatment will be continued to the time when repeated Wassermann reactions cease to be positive. I believe it advisable to continue potassium iodid beyond this point, the guide, of course, being the improvement or failure of the sense of hearing.

1201 Highland Building.

SEVERE MERCURIAL STOMATITIS CAUSED BY THE ADMINISTRATION OF CALOMEL

REPORT OF TWO CASES

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During the last two months two severe cases of mercurial stomatitis have come under my observation: an acute case, and a case of thirteen years' standing, showing the result after recovery. At this time it seems especially appropriate to report these cases, as calomel is being extensively used as a routine cathartic, though many eminent therapeutists are advising against its routine use.

REPORT OF CASES

CASE 1.—*History.*—W. H., a white man, aged 50, a farmer, whose habits were good, and who had always enjoyed good health except for the usual diseases of childhood, had malaria in 1916. He had been slightly salivated on several occasions after taking calomel. Oct. 25, 1919, he felt bad and was constipated. He took several cathartics, such as castor oil and magnesium sulphate. These did not give him the proper relief, so he concluded he was "bilious," and took two "liver pills," not knowing that they contained 1 grain of calomel each. The patient stated that he would have taken calomel, but he remembered the disagreeable salivation which he had noticed several times before. The pills did not have the proper effect, but on the following day he became salivated, saliva dropping from the corners of his mouth. This was followed the next day by an increase in salivation, but the patient, having work to do, was out in the rain for several hours. On the third day his gums and tongue became very painful, and saliva poured from each side of his mouth. Feeling very weak, aching in every joint and somewhat nauseated, he became alarmed and summoned a physician. On this day I was called in consultation, and found the patient very much weakened; severe diarrhea, aching in joints, and soreness of the mouth were his chief complaints. Saliva was dripping from the mouth. There were two black gangrenous streaks, one on each side of the tongue, and several black gangrenous areas on the inner sides of the gums. The entire tongue and mucous membranes were much inflamed. On the fourth day the black streaks on the tongue were increasing, and several small gangrenous areas were noticed on the buccal mucous membrane. The throat was red and swollen, and the patient showed marked tenderness over the jaws. The odor from the mouth was exceedingly offensive.

The only treatment that had been given was a mouth wash with compound solution of sodium borate (Dobell's solution) at frequent intervals.

Examination.—The patient was sent to the Baptist Hospital, where an examination revealed no signs of any physical disability other than the foregoing. Examination of the blood was negative for malaria. The blood count revealed: white cells, 8,000, with 64 per cent. polymorphonuclears and 36 per cent. small lymphocytes; the Wassermann reaction was negative. The specific gravity of the urine was 1.013; there was a slight ring of albumin and there were a few granular casts.

The temperature ranged from 97.6 to 98.6 F., being subnormal most of the time. Diarrhea was present throughout the disease, and salivation persisted till death. The pulse was very weak and irregular during the last three days.

Treatment and Course.—The gangrenous areas were cauterized with 50 per cent silver nitrate solution; eliminative treatment with magnesium sulphate was begun, as was also stimulative treatment with strychnin and digitalis. The patient was put on a soft diet. This treatment was continued throughout the illness, except that chromic acid was used at intervals in place of the silver nitrate to cauterize the gangrenous areas. Cauterization was carried out twice a day.

On the fifth day the gangrene continued to spread, involving the entire upper and lower gums, with several gangrenous spots on the soft palate. The condition became progressively worse; there was gangrene of nearly the entire inner surface of the mouth, and the teeth became loosened and painful to the touch. The patient's general condition also became very grave, with a rapid, irregular pulse, weakness and complete loss of appetite; he became very restless and finally sank into semiconsciousness and died on the seventeenth day.

During the course of the illness, especially during the last few days, large gangrenous sloughs came from the inner surface of the mouth, sometimes hanging down into the esophagus, causing the patient almost to strangle. Before his death the only tissue in the mouth that was not gangrenous was a small strip in the middle of the tongue, about 1 by 6 cm., posteriorly. The gangrene was moist, and extended deep into the tissues underlying the mucous membrane.

CASE 2.—*History.*—L. G., a white man, aged 18, a farmer, of moderate habits, had had malaria when he was 5 years old, and his physician gave him a dose of calomel. The following day he became severely salivated. His condition became progressively worse, with weakness, diarrhea, salivation, and finally gangrene of the entire inner side of mouth. This condition lasted about three weeks, at which time the patient began to improve, and by the end of two months he was able to get out of bed. During the course of the illness his mouth was extremely sore and inflamed, with a profuse saliva. Nearly the entire right cheek sloughed away, and all but one or two teeth became loosened and fell out. The patient gradually improved, but because of soreness was unable to open his mouth. Later, scar tissue formed, making it impossible for him to open his mouth at all. From the time of his recovery till the present time he had fed himself through a small space, where a tooth had fallen out.

Examination.—On entrance to the Charity Hospital, the patient was poorly nourished and poorly developed. There were no physical disabilities other than the following: The patient was unable to open the mouth at all. On the right side of face there was a hard scar, circular in outline, involving the entire right cheek. It was adherent to the bony structures underlying it. There seemed to be bony union between the inferior and superior maxilla on the right side. The condition of the condyles could not be determined, as the scar made any motion of the condyles impossible. The inner side of the mouth could be seen only by passing a cystoscope

through the space left by the absence of a tooth. The exact condition could not be made out, but there seemed to be very little mucous membrane left, there being an excessive amount of scar tissue in all parts of the mouth. The tongue appeared normal. Roentgenographic examination revealed a bony formation between the upper and lower jaws on the right side, but did not show the condition of the condyles satisfactorily.

Operation and Findings.—A plastic operation was performed to cover up the cheek and to get motion in the jaws. Only the pathologic condition will be described here, as it is too early to give the end-results of the operation. I may say here, however, that after operation the mouth could be opened to the extent of about 1 inch. A flap from the neck was turned upward to cover the defect in the cheek. Mucous membrane was transplanted in various places in the mouth.

There was a very ugly formation of scar tissue, taking in the entire right side of the cheek and firmly attached to the bony structures underlying it; the lips and corner of the mouth on the right side were absent. The mucous membrane on the under surface of the lips was gone, and the lips were adherent to the gums. Thick scar tissue held the mouth firmly closed. The entire buccal mucous membrane had been replaced by scar tissue. The tongue was bound to the floor of the mouth by bands of scar tissue.

The inferior and superior maxillary bones were strongly united by bony union. The floor of the right antrum had entirely sloughed away, the inferior maxilla forming its floor. A few teeth still remained in front, the right lower canine, one bicuspid and the right upper first molar. These were very much distorted and did not come in contact, but overlapped and pressed firmly against the opposite gums. The condyles were not involved.

COMMENT

These are the two most severe cases that have come under my observation in a relatively short time, though a number of milder cases of salivation have been seen. It surely seems time for general practitioners to take these conditions into consideration and to discontinue the promiscuous use of calomel as a cathartic.

I believe I am safe in saying that calomel is misused more than any other drug, especially in the Southern States. There are certain sections in the South where calomel is used in 90 per cent. of all diseases. Many practitioners continue to administer calomel for its effect on the liver, in spite of the fact that all standard textbooks on pharmacology teach that it has no action on this organ. As recently stated: "Calomel, being insoluble in the mouth and the stomach, passes through without affecting them in transit. . . . As soon as the calomel enters the intestine, it is attacked by the alkaline pancreatic and intestinal juices, which decompose it into mercury and yellow mercuric oxid. The latter dissolves slowly and incompletely in alkaline intestinal fluid. The small quantity of mercuric ions thus liberated excites peristalsis. . . ."[1] We are certain now that the action of calomel as a cathartic is simply a mechanical irritation due to the metallic mercury liberated, and that it has no action on the liver.

In the South calomel is widely used, every family using it, every druggist prescribing it, and, unfortunately, the majority of physicians using it, and allowing the laity to labor under the wrong impression that it cleans the liver in "bilious disorders" (this term being applied when no other diagnosis is made). We as physicians should strive to correct this false impression. There are certainly many efficient cathartics which are less dangerous.

857 North Jefferson Street.

1. Use and Abuse of Cathartics, J. A. M. A. **74**: 248 (Jan. 24) 1920.

CANCER OF THE CERVIX AND ITS TREATMENT

REPORT OF CASE

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BALTIMORE

If all cases of uterine cancer could be seen in their incipience, and appropriate treatment given, the end-results would be brilliant. I herewith summarize the history of a case of cancer of the cervix which is interesting because it is the earliest case of the kind that I have seen.

REPORT OF CASE

History.—J. A. E. M., woman, aged 48, married, primipara, referred, June 15, 1916, by her family physician, Dr. Roland Fisher,, Denton, Md., complained of uterine hemorrhage. A working diagnosis of very early operable cancer of the cervix was made. The final diagnosis was squamous cell carcinoma of the cervix. The patient had suffered with a constant bleeding from the uterus for the last one and one-half years. Her clothes were saturated with blood, requiring frequent changing every day. She was unable to tell whether she had menstrual periods or not, as the flow of blood was so continuous and free. Some loss of strength was also noted.

Examination.—There was no loss of weight and no pain or discomfort anywhere. There were no local symptoms referable to the bladder or rectum and no indigestion or cough. The general physical, as well as the other routine examinations, revealed nothing to contraindicate operation. The abdominal examination was entirely negative. No glands were palpable in the inguinal regions. Pelvic examination revealed a moderately relaxed outlet. The cervix was small and firm; from the external os a small bud of bleeding granular tissue protruded. This was removed with forceps for microscopic examination. (A frozen section cut within a few minutes of its removal showed that this was squamous cell carcinoma.) The body of the uterus was in good position, normal in size and shape, and freely movable. The ovaries were normal. The broad ligaments were not infiltrated.

Operation and Results.—I performed an abdominal panhysterectomy, June 17, 1916, the parametrium and paracervical tissues being removed widely. No enlarged glands were found. Convalescence was uneventful as one would expect, and the patient has remained well to this day.

COMMENT

The area of disease was tiny. The growth had become pedunculate, and most of it was removed by the original curettage. The disease found in and beneath the cervical mucous membrane measured about 1 cm. across. Further sections of the rest of the cervix revealed no other involvement. No disease was found in the parametrium.

Proverbially, "hindsight is clearer than foresight." Of course, if one could be sure in such a case that the size of the surface growth represented the extent of the disease, and that the latter did not burrow back widely into the cervical tissue, an amputation of the cervix, or even in this exceptional instance, a local cauterization, would be quite sufficient to effect a cure.

Unfortunately, until one has an extirpated specimen in one's hand, and, indeed, even then, one cannot tell how far a cancer may extend into the neighboring and apparently healthy parts.

I have often recalled a regrettable instance in which I amputated a cervix that appeared to be hypertrophied, but not the seat of a carcinoma. Examination of the specimen after removal disclosed an early squamous cell cancer well up in the cervical canal and apparently removed in toto. In spite of the fact that

the amputation seemed well wide of the disease, I urged the patient to submit to a radical panhysterectomy. She refused to consider it, and later died of cancer.

Another typical instance was that of a patient examined by a well-known gynecologist in whom the disease appeared in a plaque just above the os, measuring only 1 or 2 cm. across its surface. The cervix was not enlarged. Curetting, however, proved that it was entirely honeycombed with carcinoma.

Occasionally, a radical hysterectomy is not possible on account of the general condition of the patient. In such a case (as yet unreported) the patient was operated on by Dr. P. McC. Keating, in 1914. After performing a high cervical amputation, Dr. Keating discovered a very early cervical cancer. Nothing further was done, since to subject the woman to a radical operation would have been to court disaster, and no radium was available. It is gratifying to find that now, nearly five years after operation, the patient remains well—a living evidence of the surgeon's good judgment.

THE IDEAL TREATMENT

What now constitutes the ideal treatment of this type of case? We all remember the old rule of table-manners to the effect that "all things that can be eaten with a fork must be eaten with a fork." Ten years ago this might have been parodied to read: "All patients with cervical cancer that can be operated on, must be operated on."

During the last few years there has been a great increase in experience in the use of radium, which has established it in all cases as a formidable rival of the accepted Wertheim operation. The high mortality of the latter—even in most skilful hands—as well as its failure to effect a permanent cure in the great majority of the extensive, though still possibly operable, cases of cervical cancer have almost or quite persuaded many that it should be given up, and treatment with radium substituted.

Kelly, Burnam, John Clark, Ransohoff and others believe that a very high percentage of early cervical carcinomas can frequently and quickly be destroyed with radium alone. This is quite certainly true. My own opinion is that in this kind of case there is an excellent chance of cure either by the use of radium or by an operation well performed, but that the best chance is given by first treating the condition in the early cases thoroughly with radium, and then performing the usual wide abdominal panhysterectomy.

I do not believe that the results will be so good if the procedure is reversed, i. e., if the operation precedes the use of the radium. Before operation we are able to place the radium high up in the cervix close to the parametrium, while after it the vagina is shortened and the radium cannot safely be placed near the area of danger. In the case of early cervical cancer, operation should be comparatively easy and the mortality correspondingly low.

Given an operable but extensive cancer of the cervix, I believe our best chance of cure lies in the use of radium alone. Even if the mass shrinks to small proportions after radiation, the safest course is not to operate but to depend on further heavy treatments with radium.

Finally, when confronted with an inoperable cervical cancer, I do not believe that the use of any of the palliative measures, such as slow heat or acetone, are to be considered, as the results of none of them are even comparable with those obtained by the intelligent use of a sufficient quantity of radium. By it the great majority of patients in whom the disease is distressingly extensive can be tremendously improved, and some even cured.

1418 Eutaw Place.

Clinical Notes, Suggestions, and New Instruments

A CASE OF COMPLETE VOLVULUS OF THE ENTIRE MESENTERY

WALTER D. WISE, M.D., BALTIMORE

REPORT OF CASE

Mrs. X, admitted to the hospital, Oct. 31, 1919, had been operated on two years previously in another city for pelvic trouble, but had not entirely recovered, having some abdominal discomfort and, at various times, attacks of severe pain and vomiting. On the day before admission she was seized with an attack more severe than usual and grew progressively worse, vomiting was constant, the pain was severe, and constipation was complete. She was operated on in about thirty hours after the beginning of this attack. An incision to the left of the previous scar gave entrance into the free abdomen and showed considerable straw-colored fluid and a loop of distended intestine. Under the scar was an intestinal coil tightly adherent to the parietal wall and containing in its wall a rather firm mass; running from this mass there were two bands, one of which was causing the obstruction. Both were released, and the distended and discolored loop began immediately to improve in appearance. The adherent section of the bowel was easily freed, and could then be brought up into the field. It was seen that a mass about the size of an egg was embedded partly in the intestinal wall and slightly in the mesentery. By tedious dissection it could be removed in its capsule without irreparable damage to the intestinal wall. The peritoneal coat of the intestine was sutured satisfactorily and the abdomen closed. During the dissection the diagnosis of the tumor had been suspected, and a section revealed that the suspicion was correct: it was a gauze sponge. Convalescence was smooth and satisfactory for seven days, when there was an attack of pain and some vomiting, which were relieved by an enema. Three days later, the patient had a similar but more violent attack beginning in the late afternoon. I did not see her until the next morning. She had been vomiting persistently and was considerably shocked or prostrated. Pain was of moderate degree, and the bowels had moved in the early morning as a result of an enema. Because of the character of the vomiting and her general appearance, an immediate operation was advised. Exploration revealed adhesions of the intestine to the parietal wall and almost countless numbers of viscerovisceral adhesions. The small intestine was moderately distended and very dark in color. On separation of any of the adhesions, there was profuse venous bleeding. Even with the most careful handling and gentleness, hemorrhage soon became a factor to be considered. It seemed impossible to locate the cause of the obstruction. However, by patient dissection, with considerable loss of blood, a view was finally obtained. It could be made out that there was a herniation of a large section of intestine through an arch made by two adherent loops, but reduction of this did not change the appearance of the bowel. It was then seen and could be demonstrated to onlooking surgeons that there was a torsion of the mesentery of at least one complete turn, probably a turn and a quarter from right to left. The adhesions were by this time freed sufficiently to permit of rotation of the mesentery, and as soon as this was done the intestine resumed its normal color. There were a considerable number of thrombosed vessels in the mesentery, but

as the subsequent history disclosed, not enough to cause trouble. As soon as the torsion was relieved, the venous bleeding ceased. The abdomen was closed except for a small drain. Salt solution was given during the operation and subsequently. The patient had a surprisingly calm convalescence, and left the hospital, December 6, restored to health.

COMMENT

Torsion of the entire mesentery is a rare condition. In 1903, Dr. George Tully Vaughan[1] reported a case of his own seen at postmortem, and reviews the literature, abstracting the histories of twenty other cases; of these, seventeen came to operation, with four recoveries—a mortality of 76 per cent.

In 1914, Weible[2] reported a case in which the patient recovered, and gives a summary of sixty-six other cases, including those reported by Vaughan; of these there were twenty-two recoveries.

In 1917, Vaughan[3] reported another case of twisting of the whole mesentery, with a loss of the patient on the table.

In 1917, Garrow[4] reported a case seen at necropsy in which there was a twist of three and one-half turns, or 1,260 degrees.

According to these figures, the case herewith presented is the seventieth to be reported, and the twenty-third in which the patient recovered.

1800 North Charles Street.

QUININ IN INFLUENZAL PNEUMONIA

A. J. CAFFREY, M.D., MILWAUKEE

During the epidemic that began in the fall of 1918, I used quinin sulphate in influenza and influenzal pneumonia chiefly for its diaphoretic and antifebrile effect. From a clinical study at that time, I found that patients could take liberal sized doses of from 10 to 20 grains every four hours the first day, and 5 grains every four hours during the course of the disease, without showing marked signs of cinchonism.

Since reading Cohen's[1] article on the treatment of the pneumonias, I have been using quinin hydrobromid, as I found it difficult to get the dihydrobromid, which he recommended as the preferable salt; however, from a study of the effect of this salt, the hydrobromid, it seems to have given more satisfaction than the sulphate, in that the patients seemed more restful, it reduces the fever promptly, and in most instances keeps it under 100 F.; and in hospital cases in which blood counts were repeatedly made, I found usually following the first large dose a marked leukocytosis; I never found a real crisis in any of the cases in which it was used. This may not be due entirely to the effect of the drug, because, most of the influenzal pneumonias being bronchial and lobular in type, the course is by lysis rather than by crisis, which occurs usually in the lobar type.

I gave 25 grains for the first dose, 10 grains for the second dose, and continued throughout the course of the disease with 5 grains every four hours; and from my limited study of its effect, I agree with Dr. Cohen that the quinin salts combat bacterial poisons and tissue poisons, and give clinical evidence that they are pneumococcicidal if given in sufficient doses. I have never had a complaint of quinin amblyopia or marked tinnitus aurium and head noises which patients usually complain of when the drug is used in other troubles. Since quinin is said to be ecbolic, I do not know what effect it might have in pregnancy accompanying pneumonia, as none of my patients were pregnant during their illness.

I have never felt that the emergency of the effect of quinin in any of my cases justified the method of administering it intravenously or intramuscularly. It seems to me that the disturbance and pain incident to this method of administration would have a bad effect on any one ill with pneumonia, and there is always a possibility of abscess formation with necrosis when a large dose is given intramuscularly.

COMMENT

This treatment, quinin being the chief drug used in combating the disease, with other auxiliary drugs, such as digitalis, atropin and pituitary extract, good nursing, nourishing diet, fresh air, etc., was followed out in twenty-seven cases of influenzal pneumonia with only one death. It is understood, of course, that the number is too small to establish the specificity of quinin. The low mortality in my series may have been accidental, but it is the lowest I have ever had in the same number of cases in other years.

ICE-BOX FIXATION IN THE WASSERMANN TEST FOR OFFICE PRACTICE

OSCAR BERGHAUSEN, B.A., M.D., CINCINNATI

A year ago I[1] advocated the method of ice-box fixation in the Wassermann test, using simple alcoholic extract of syphilitic organs as antigens. Further experience has convinced me that this method is satisfactory in the examination of a large number of serums for diagnostic purposes. The results obtained are usually either strongly positive or negative when the fixation is carried out at a temperature not exceeding 4 C (39.2 F.). Slight inhibition in hemolysis is unusual and, when obtained, is always recorded as negative. Serums obtained from patients not syphilitic always give a negative reaction.

When cholesterinized antigen is used in the original Wassermann reaction with fixation in the water bath at 37 C. (98.6 F.), more positive reactions are obtained than with simple alcoholic extracts as antigen and fixation in the ice box over night; but serums obtained from patients definitely not syphilitic may give a positive reaction with cholesterinized antigen, and for this reason the result is not always reliable for diagnosis. When the serum has been obtained from a syphilitic patient under treatment, some attention may be paid to a positive result obtained only with cholesterinized antigen, since this reaction is the last to disappear.

After examining about 3,000 serums at the Cincinnati General Hospital, which has a modern refrigerating system, the problem arose as to how it might be possible to secure a constant low temperature of 4 C. or less by a simpler method, in order to make the method of ice-box fixation practical for a smaller laboratory. After a little experimentation I found that the "Frigidaire" refrigerator, manufactured in Detroit, was satisfactory for this purpose. It is run by electricity at an expense of less than $5 a month, and can be set to maintain a constant temperature of 4 C. in the lower chamber. It has been my custom to place the rack containing the test tubes in the lower left hand chamber, cover them with a sterile towel, and remove them about sixteen hours later, finishing the reactions by adding the requisite amount of sheep corpuscles and amboceptor and then placing the racks in a water bath at 37 C. Occasionally, serums which have anticomplementary properties, especially when they have been preserved for three or four days, will show a lack of hemolysis in the control tube containing no antigen. Such serums must be tested again, the standard Wassermann technic of fixation in the water bath at 37 C. for one hour being used. Usually it will be found that such serums give a strongly positive reaction by this method.

As a routine, two alcoholic extracts of syphilitic organs are used as antigens. It is not necessary to employ the Noguchi acetone insoluble fraction of lipoids as antigen, for simple alcoholic extracts give better results when the method of ice-box fixation is used. Comparative results, with the same antigen and the same serums, have shown this mthod to be more satisfactory than the Hecht method, with active serum. The reactions are always either distinctly negative or positive; slight inhibition in hemolysis occurs infrequently. Results are thus recorded: Wassermann (original) negative or positive; Wassermann (Frigidaire) negative or positive.

19 West Seventh Street.

1. Vaughan, G. T.: Am. J. M. Sc. **125,** 1903.
2. Weible: Surg., Gynec. & Obst. **19:** 644, 1914.
3. Vaughan, G. T.: Virginia M. Semi-Month. **22:** 89 (May) 1917.
4. Garrow, R. P.: J. Roy. Army Med. Corps, December, 1917.

1. Cohen, S. S.: Present Status of the Definite Treatment of the Pneumonias, J. A. M. A. **73:** 1741 (Dec. 6) 1919.

1. Berghausen, Oscar: Superiority of the Method of Ice-Box Fixation in the Wassermann test, J. A. M. A. **72:** 996 (April 5) 1919.

CIRCUMCISION FORCEPS

MYER N. MOSKOVICH, M.D., PHILADELPHIA

The circumcision forceps here illustrated consist of a pair of handles, not unlike those of the ordinary hemostatic forceps, terminating in circular jaws corrugated on their inner surfaces and having seven equidistantly placed indentations to permit the passage of sutures while the forceps are still in place. Various sizes may be had, and they are best employed in older children and in adults when no edema or swelling of the prepuce exists.

The forceps may be used with any of the various methods of performing a circumcision. The blades are opened and one ring is passed over the penis with the handles pointing toward the head of the patient. A dorsal slit is now made and the ring brought up to the level of this slit, with the handles between the cut edges of the prepuce. The latter is everted over the ring, the second ring passed over the head of the penis and the forceps clamped. The projecting prepuce is cut with a knife or curved scissors, sutures are inserted at the points of indentation, and the forceps are removed.

Circumcision forceps.

It will be difficult to convince the reader of the full value of this little instrument, because of the fact that the doing of a circumcision is already such a simple procedure that further simplification hardly seems possible. Certain facts, however, remain:

1. The time taken to perform the operation is diminished considerably.
2. Perfect coaptation with earlier union and a minimum amount of scarring results.
3. The procedure is practically bloodless, all bleeding points being checked, through mere pressure, before the forceps are removed.

Jefferson Medical College.

A NEW USE FOR COVER GLASS FORCEPS

RALPH WALDO PLACE, M.D., SOMERVILLE, MASS.

Cilia forceps are not what they ought to be. I have tried several and I have bent and filed them; but they will not hold the slippery hairs in trichiasis. Some time ago I gave them up in favor of ordinary spring forceps, the kind opticians use in setting up eyeglass frames and known as tweezers. These served me well, and I still use them sometimes in the "corners"; but one day after working a long time on a particularly difficult case I happened to try a pair of cover glass forceps. These grasped the hairs better than anything I had ever tried, and I have used them satisfactorily ever since. Of course, they should be used only for this work, and they should be carefully sterilized.

165 Medford Street.

A Case of Quadruplets.—I recently delivered a woman, after a six months' pregnancy, of quadruplets. A reference to statistics shows that they occur once in every 371,126 deliveries, and for this reason I thought it worth while to publish my experience. This was a case of multiple impregnation of a single ovum, as there was a common chorion. Each fetus was within its own amniotic sac, and all were males. The placenta, if not a common one, was so anastomosed that it could not be differentiated. All the fetuses were dead at the time of delivery.—CHARLES E. FALLET, M.D., De Soto, Mo.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

LACTIC ACID-PRODUCING ORGANISMS AND PREPARATIONS (See New and Nonofficial Remedies, 1920, p. 156).

BACILLUS BULGARICUS-SQUIBB.—A pure culture in vials, of the *Bacillus bulgaricus* type A, the *Bacillus bulgaricus* type B (*Bacillus acidophilus)* and *Bacillus paralacticus,* each vial containing 12 Cc.

Actions and Uses.—Bacillus Bulgaricus-Squibb is designed for internal administration, topical applications in nasal and throat affections and for direct application to abscesses, wounds and old ulcers. See general article, Lactic Acid-Producing Organisms and Preparations, New and Nonofficial Remedies, 1920, p. 156.

Dosage.—The contents of one tube daily after meals or before retiring. The culture is marketed in packages of twelve vials. The culture should be kept in a cold place, and is not guaranteed beyond the date stamped on the package.

Manufactured by E. R. Squibb & Sons, New York. No U. S. patent or trademark.

POLLEN EXTRACT PREPARATIONS (See New and Nonofficial Remedies, 1920, p. 226).

POLLEN ANTIGEN-LEDERLE (SPRING TYPE).—A liquid obtained by extracting equal parts by weight of dried pollens of timothy, red top, June grass, orchard grass, sweet vernal grass, meadow foxtail, meadow fescue, rye and wheat by a vehicle of 67 per cent. glycerine and 33 per cent. saturated solution of sodium chloride. It is standardized so that each Cc. contains 14,000 pollen units; a pollen unit has been arbitrarily chosen by Koessler, Noon and Freeman as the equivalent of one-millionth gram (0.000001 Gm. or 0.001 Mg.) of pollen. The Hygienic Laboratory has prescribed no U. S. Standard of Potency. The antigen after preparation is made into fifteen different dilutions by the addition of a proper amount of the glycerine-sodium chloride solution diluent.

Actions and Uses.—See general article, Pollen Extract Preparations, New and Nonofficial Remedies, 1920, p. 226.

Dosage.—The product is supplied in fifteen different doses. Each dose consists of 0.1 Cc. of the respective dilution. Accompanying each dose is a vial containing 9 Cc. of sterile water with which to make the pollen antigen of isotonic strength immediately before administration. For prophylaxis, the complete series (doses 1 to 15) containing progressive amounts of pollen protein should be given, beginning about six weeks before the hay-fever season. For treatment of an actual attack of hay-fever, fewer doses are generally sufficient.

Manufactured by the Lederle Antitoxin Laboratories, New York. No U. S. patent or trademark.

Pollen Antigen-Lederle (Spring Type) Series A.—Marketed in packages of five vials containing for each consecutive dose (numbers 1 to 5 inclusive) 2.5, 5, 10, 20 and 25 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Spring Type) Series B.—Marketed in packages of five vials containing for each consecutive dose (numbers 6 to 10 inclusive) 30, 50, 75, 100 and 150 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Spring Type) Series C.—Marketed in packages of five vials containing for each consecutive dose (numbers 11 to 15 inclusive) 250, 375, 500, 750 and 1,000 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Spring Type) Complete Series.—Marketed in packages containing 15 doses as described in Series A, B and C above.

Pollen Antigen Immunity Test—Diagnostic Test for Spring Type Hay-Fever-Lederle.—Consists of 0.01 Cc. of No. 15 dilution of pollen antigen-Lederle (spring type). It represents 100 pollen units of the combined pollen protein. May be used cutaneously or intradermally.

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SATURDAY, APRIL 24, 1920

The postal situation is well known by all our readers. Matter sent by parcels post, and periodicals, have been meeting with lengthening delays in transmission. More recently delivery of even first-class mail has been delayed. This item is published to explain delay which may occur in the receipt of THE JOURNAL. The copies are delivered at the Post Office at the usual time each week, and any delay in their receipt must be charged to the postal conditions. It is hoped that our readers will allow for the present difficulty and not request additional copies until sufficient time has elapsed to make sure that missing copies will not be received.

EXPERIMENTAL LOBAR PNEUMONIA

Many attempts have been made to produce lobar pneumonia experimentally in animals, but only with occasional and partial success, and under experimental conditions not encountered in the spontaneous disease in man. In order that experimental results may be of the maximum value, a method is required by which lobar pneumonia can be regularly produced in animals, without otherwise modifying their physical condition or surroundings, so that the clinical, bacteriologic and pathologic changes of all stages of the disease may be studied and compared with the disease in man. The work of Blake and Cecil [1] at the Army Medical School, on the experimental production of lobar pneumonia in monkeys by the intratracheal injection of pneumococci, appears to fulfil these requirements, and furnishes an enlightening chapter in experimental medicine.

In a series of thirty-seven normal monkeys, lobar pneumonia was produced in thirty-two; two others died of pneumococcus septicemia; and in three which received small doses, no disease was produced. Pneumococci, in amount from 1 to 0.000001 c.c. of an eighteen hour culture, were introduced into the lumen of the trachea by means of a sterile needle inserted between the cartilages below the larynx. In most of the animals Type I pneumococcus was used, but pneumonia was also produced by Types II, III and IV. Following the inoculation, blood cultures, leukocyte counts and observations of the temperature, clinical course and physical signs were made. Symptoms of illness usually appeared in from twelve to thirty-six hours after inoculation. The report is accompanied by protocols of a number of the cases. The temperature curves, often with critical drops on the seventh to the ninth day, were similar to those seen in lobar pneumonia in man. Blood cultures showed varying grades of pneumococcemia, which in nonfatal cases usually disappeared before the crisis, but in some of the severer infections increased enormously before death.

In several respects the features of experimental lobar pneumonia in monkeys showed a parallelism with those of the disease in man which is not only of great experimental interest, but opens the way for the determination of a number of clinical questions related to lobar pneumonia, the answers to which till now have been impossible or largely matters of opinion or surmise.

The finding of pneumococci in the blood within six hours after the introduction of the organisms into the trachea, and before the signs of pneumonia appeared, will go far toward clarifying our conception of the mode of invasion in pneumonia, whether hematogenous or bronchigenic, and furnishes apparently clear evidence in favor of the bronchigenic origin of the disease. This view is further strengthened by the failure of intravenous or subcutaneous injections of pneumococci to produce pneumonia, and by the observation that even when the intratracheal route was employed in monkeys, with lobar pneumonia usually resulting, there were occasional instances in which a pneumococcus sepsis was produced without clinical or postmortem evidence of lobar pneumonia.

By examining the animals early (three hours) after intratracheal inoculation, Blake and Cecil were able to demonstrate the penetration by pneumococci of the bronchial wall near the hilum. The further spread of pneumococci, as observed in other animals in the series, was apparently by way of the interstitial tissue and lymphatic system of the lung, and hepatization began centrally and proceeded toward the periphery of the lung. The pathology of the pneumonic lesion produced in the monkey was identical with that seen in lobar pneumonia in man.

The preliminary rise in leukocytes in monkeys after inoculation was followed by a fall, the rapidity and extent of which was proportional to the severity of the disease and the degree of pneumococcal invasion of the blood. In the less severe cases, the preliminary fall in leukocytes was followed by a rise, accompanied by decrease in the number of pneumococci in the blood until the blood became sterile, usually several days before crisis. This relation of leukocytosis to severity of disease, in which failure of leukocytosis was indicative of serious prognosis, affords experimental sup-

1. Blake, F. G., and Cecil, R. L.: J. Exper. Med. **31**: 403 (April) 1920.

port of the clinical observation in man that, in general, the prognosis in patients showing a moderate leukocytosis is better than in those in whom there is no leukocytosis or a leukopenia.

Instances of empyema, delayed resolution, pericarditis and persistent pneumococcal sepsis occurred in monkeys just as in the natural disease in man. Monkeys inoculated in the throat and nose with pneumococci did not develop lobar pneumonia, although the organisms persisted for many days, whereas inoculation of the lower respiratory tract regularly produced the disease. As the authors point out, these facts indicate that in monkeys, something besides the mere presence of virulent pneumococci in the upper respiratory tract is necessary for the development of pneumonia; and presumably the same is true in man. The rôle of contact with the sick was shown in one experiment, in which one animal of several exposed to monkeys sick with pneumonia developed lobar pneumonia.

In addition to the elucidation of the mechanism of infection in pneumonia, this demonstration of a method whereby lobar pneumonia may be produced regularly under controllable experimental conditions is perhaps of still greater importance in that it affords opportunity for the experimental study of prophylactic immunization against pneumonia, and for determining the actual value of antipneumococcic serums in the cure of the developed disease. We shall await the results of these investigations with interest.

SCURVY NOT A BACTERIAL DISEASE

Acquired beliefs are not easily given up when once they have become deeply rooted in the customary thought and writing of a period. This fact has often been illustrated by the tenacity with which medical men tend to cling to traditional theories that have been tried by the tests of science and found wanting. It was a long time before the version of the etiology of malaria now current became accepted by every physician. Before the possible significance of insects in the transmission of disease became common knowledge, the idea of ascribing real bodily danger rather than mere temporary discomfort to the seemingly unimportant mosquito made slow headway.

On the other hand, when once some novel type of agent has been clearly demonstrated to be concerned in the causation of hitherto unexplained diseases, it soon tends to achieve a degree of popularity that may subsequently actually become detrimental. Thus, when bacteria were at last universally admitted to be potent causes of pathologic changes in man, bacteriology was promptly called on to explain many of the unsolved mysteries of disease. For centuries, scurvy was regarded as a disease due to dietetic errors. Then came the time when the theories of the etiology of scurvy began to include that of a bacterial origin. Following Coplans,[1] Jackson [2] and her collaborators in this country have offered some experimental support for this view. Thus they found coccus-like bodies in microscopic sections of lesions in scorbutic guinea-pigs, and they isolated gram-positive and gram-negative organisms from the diseased joints, muscles and lymph nodes of these animals. Pure strains of these bacteria introduced into guinea-pigs gave rise in most instances to hemorrhagic and other lesions in the bones, joints, muscles, lymph nodes and organs.

It is not difficult to believe, however, that animals in a scorbutic condition due to dietary deficiencies may readily be susceptible to a secondary bacterial invasion, just as terminal infections in many chronic conditions have no direct relation to the primary disease. Of late the study of experimental scurvy has been extensively prosecuted in England and America, with the result that the disease can now be evoked, averted or cured with considerable precision by purely dietary control. This fact of itself negatives the probability that bacterial infection is a prime factor in the genesis of scurvy. The products of putrefaction have also been charged with responsibility for the appearance of scurvy. Torrey and Hess [3] have concluded, however, that scurvy, both of guinea-pigs and of infants, is not associated with an overgrowth of putrefactive bacteria in the intestinal tract.

The most convincing evidence against the bacteriologic hypothesis has been offered by Givens and Hoffmann [4] from the Research Laboratories of the Western Pennsylvania Hospital, Pittsburgh, who have made bacteriologic examinations of the blood and tissues of scorbutic animals. Blood from the latter, regardless of the diet producing the disease, has been found to be sterile. The enlarged front joints of guinea-pigs developing scurvy on oats alone were sterile; this was likewise true in the majority of cases of guinea-pigs developing scurvy on other special diets. Occasionally, staphylococci or diplococci were isolated; but these could not be made to produce scurvy when introduced into healthy guinea-pigs. The intestinal flora likewise showed no differences between the scorbutic and non-scorbutic animals which could explain the genesis of the disease.

With the bacteriologic hypothesis left without tenable scientific confirmation, with McCollum's theory that chronic constipation is a decisive factor abandoned,[5] and with an abundance of experimental evidence in favor of the view that dietary deficiencies play the decisive part in the genesis of scurvy, the current

1. Coplans, M.: Tr. Epidemiol. Soc. **23**: 1, 1904.
2. Jackson, Leila, and Moore, J. J.: J. Infect. Dis. **19**: 478 (Sept.) 1916. Jackson, Leila, and Moody, A. M.: Ibid. **19**: 511 (Sept.) 1916.
3. Torrey, J. C., and Hess, A. F.: Proc. Soc. Exper. Biol. & Med. **15**: 74, 1917-1918.
4. Givens, M. H., and Hoffmann, G. L.: Preliminary Observations on the Relation of Bacteria to Experimental Scurvy in Guinea-Pigs, J. Biol. Chem. **41**: xxxiii (March) 1920.
5. Cohen, B., and Mendel, L. B.: J. Biol. Chem. **35**: 425 (Sept.) 1918. Chick, H.; Hume, E. M., and Skelton, R. F.: Biochem. J. **12**: 131, 1918. Hess, A. F., and Unger, L. J.: J. Biol. Chem. **35**: 479 (Sept.) 1918. Harden, A., and Zilva, S. S.: Biochem. J. **12**: 270, 1918.

studies on antiscorbutics are placed on a more stable foundation. It matters little that they have in the main been tested primarily on animals, notably the guinea-pig and the monkey; for the essential identity of the disease in these animals and in man has been generally accepted by investigators.

MEDICAL ASPECTS OF THE JUVENILE COURT

The first juvenile court in the United States, as we are informed by Belden,[1] was established by the Illinois legislature, July 1, 1899. It marked the beginning of the juvenile court movement in this country. Previous to that time some states had provided for separate hearing of children's cases, but the Illinois law was the first serious attempt in the United States at modification of court procedure so far as it related to children. Shortly afterward, Colorado came to the front and passed a special juvenile court law, which has been a model for other states.

In general, the special modification of court methods which has been necessary in the development of the juvenile court has been based on the fundamental principle that the child is a ward of the court. One of the chief distinctions between the usual criminal procedure and the juvenile court procedure lies in the matter of evidence. The purpose of the court is not to discover whether a crime has been committed but rather to ascertain what were the underlying conditions that caused the commission of the crime. Were they physical, mental, social? Then comes the question as to what should be done with the culprit for the best interest of the people and of the child.

Obviously, the matter of first importance is the physical and mental status of the child, for these are intimately associated with what he is and how he became what he is. Furthermore, a knowledge of his family and personal history is equally essential to a successful rehabilitation. Such investigation requires special adaptability on the part of the court. The procedure may be regarded as extralegal. The problems presented require expert and special knowledge not usually available. To Illinois belongs the credit for introducing such practical study of children before the courts, by the establishment of the Juvenile Psychopathic Institute. Shortly afterward the Seattle juvenile court established a "department of social diagnosis," which is still maintained. Strangely enough, physical examinations are given much more generally than mental examinations. In thirteen courts, mental clinics are maintained as part of the court organization. An excellent plan is that of the Judge Baker foundation of Boston, which provides that a large proportion of children before the juvenile court are given thorough physical examinations; their mental condition is thoroughly studied, and especially qualified investigators attached to the staff gather social data. All the information in a given case is then assembled and studied at a staff conference, and the diagnosis of the child's condition, and a recommendation as to the kind of treatment needed, is made by the director or his assistant. The group clinic idea is thus utilized to its utmost in proper placing of the child who may be either physically, mentally or morally deficient.

As a result of this work, some of the underlying causes of child delinquency and neglect are becoming more evident. The need for early recognition and treatment of abnormalities in physical, mental or moral development has been conclusively demonstrated. In a statistical table, Belden shows that there are now 246 courts, representing practically every state in the Union, which give some special attention to these problems. In fourteen states there was no report of mental examinations in clinics or by persons having special psychiatric knowledge. There remains, then, considerable need for improvement and for the establishment of uniform methods of study. The problem is a fundamental one for the community, and physicians may well lend their aid to its solution.

1. Belden, Evelina: Courts in the United States, Hearing Children's Cases, Pub. 65, Children's Bureau, U. S. Department of Labor, Government Printing Office, Washington, D. C., 1920.

BEANS AND GROWTH

The modern chemistry of the proteins has profoundly modified some of the older tenets of nutrition. With the advent of a better knowledge of the digestion and disintegration of the proteins into amino-acids, and with an appreciation of the part which the latter play as the real nitrogenous nutritive units for the construction of protein in the body, new points of view have arisen. In constructive metabolism, at least, the physiologist must deal primarily with amino-acids, of which familiar proteins are known to furnish a varied assortment. Some of these are not essential in the sense that they must be furnished as such to the organism; for they can be synthesized by the living tissues. Other amino-acids, on the other hand, and perhaps a majority of those related to proteins, cannot be thus built up anew by animal structures; hence, so far as they may be indispensable, they must become available to the body in the food if the organism is not to suffer from a lack of such "building stones," as they have been called.

Information of the sort just referred to has served to explain why gelatin, for example, is not a "complete" protein from the nutritive standpoint, and why it cannot serve as the sole source of nitrogenous units in the body. Gelatin lacks in its chemical makeup certain of the amino-acids, without which protein cannot be built up in the body. Thus it lacks cystin, tryptophan and tyrosin. Other isolated proteins are known to be chemically defective in comparable ways.

In some instances it is a relative rather than an absolute shortage of some amino-acid component that limits

the nutritive value of a protein. Osborne and Mendel,[1] for example, have furnished striking instances of the significance of this in actual nutrition experiments. One of the most impressive cases has just been elucidated by Johns and Finks[2] at the Protein Investigation Laboratory of the Bureau of Chemistry in Washington. The principal protein of the navy bean has been shown to be inadequate for growth even when an abundance of other needed foodstuffs is supplied in the ration. An explanation had been sought in the ready putrefaction of the beans, leading to supposedly harmful products in the intestine and thereby retarding growth. But Johns and Finks have ascertained that the protein of the bean is exceptionally deficient in its yield of the amino-acid cystin, an essential source of sulphur for the body tissues. When cystin or a cystin-yielding protein is added to the bean diet, growth at once becomes satisfactory, provided the beans are cooked. Why cooking is a significant factor in making the bean diets more ideal is not clear, unless the process renders the protein more readily digestible.

Under ordinary circumstances, of course, navy beans do not represent the sole source of protein, even to ardent "bean lovers"; they are supplemented by other protein foods. Nowadays, however, it occasionally happens that diets are extremely limited by intentional or accidental circumstances. Knowing the limitations of the navy bean, we can avert nutritive disaster, if it should be threatened through exigencies of the ration, by making good what the delectable legume lacks.

1. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **20**: 351, 1915.
2. Johns, C. O., and Finks, A. J.: Studies in Nutrition, II, The Rôle of Cystine in Nutrition as Exemplified by Nutrition Experiments with the Proteins of the Navy Bean, Phaseolus Vulgaris, J. Biol. Chem. **41**: 379 (March) 1920.

Current Comment

LOOK UP ITS RATING

Modern business has become so complex that it is no longer possible for those engaged in trade to know, offhand, the financial responsibility of their prospective customers. The commercial agency is a natural development; it aims to supply the technical (financial) information which the conservative business man needs but is otherwise unable to get. When John Doe & Co. contemplates entering into business arrangements with Henry Roe & Son to a degree that involves financial obligations, it looks up Roe in the rating book of Dun or Bradstreet and probably calls for a special commercial report on the concern. These facts are so elemental and obvious as to be trite. The complexity of modern medicine, especially in the pharmacologic field, has made it a physical impossibility for physicians to know the scientific status of scores of pharmaceutical products put out under proprietary or brand names. It was recognition of this fact that brought about the creation by the American Medical Association of the Council on Pharmacy and Chemistry. This body of experts, serving without remuneration and reporting without fear or favor on the newcomers to the pharmaceutical world, places at the disposal of physicians unbiased information, free alike from prejudice or prepossession. As the commercial agency reports on the commercial probity of individuals and firms, so the Council on Pharmacy and Chemistry reports on what might be called the scientific probity of proprietary and unofficial pharmaceutical products. The commercial agency issues, at no small expense to its customers, rating books; the Council on Pharmacy and Chemistry issues, at a nominal price, "New and Nonofficial Remedies." The commercial agency, for a substantial fee, will furnish reports on business concerns; the Council on Pharmacy and Chemistry[1] will, without any expense to the profession, furnish reports on proprietary products used for the relief or cure of human ailments. The careful business man avails himself of the services of the commercial agency; there are financial interests at stake. The conscientious physician will avail himself of the services of the Council; there are, it may well be, lives at stake.

LONGEVITY IN THE UNITED STATES

The expectation of life or, better, the average duration of life at various ages and in different racial groups, has been a common theme of statistical inquiry. Improved and more exact methods of calculation, together with the accumulation of additional data, are, however, continually stimulating fresh studies in this field. A recent article by Forsyth[2] on the trend of longevity in the United States, although it deals only with the census records from 1890 to 1910, contains some important figures. In 1890 the expectation of life for a male native white of native parentage at 10 years of age was 56.1; by 1910 this had fallen to 54.1. At the age of 40 the expectation in 1890 was 32.8; in 1910, 29.9. In fact, in each age group and in both sexes the average expectation showed a notable loss for the two decades from 1890 to 1910. A large loss in expectation was also shown by the native white of foreign or mixed parentage. On the other hand, the foreign-born whites, especially the males, gained materially in the average duration of life during the same period. Forsyth emphasizes especially two points: first, the remarkable longevity enjoyed by native Americans of native parentage, which he considers probably unequaled anywhere else on earth; and second, the gradual loss of this superiority at a rate of about one year each decade. He seems inclined to attribute this "momentous retrogression" to certain unspecified "factors in the American mode of living"; but it seems evident that the conditions are very complex. The "native whites of native parentage" are being added to all the time from various racial stocks not perhaps as resistant as the original native stock. From decade to decade, therefore, the native whites of native parentage represent an ethnically different

1. Write to the Secretary of the Council on Pharmacy and Chemistry, 535 North Dearborn Street, Chicago, Ill.
2. Forsyth, C. H.: Quart. Pub. Am. Statistical Assn. **16**: 495 (Dec.) 1919.

group. Whether the loss in expectation is due to some mingling of less resistant strains or whether the shortening in average duration of life is due to purely environmental factors can perhaps hardly be determined. The question is one that must be considered in connection with the fact that in recent years in this country the general mortality has increased disproportionately in the ages above 40. At all events, the bearing of the census of 1920 on the trend of longevity will be awaited with interest.

ENCEPHALITIS IN HORSES

There occurs an epidemic disease of horses, known as enzootic encephalitis, or Borna disease, which has been observed in many parts of the world, including the United States. This disease exhibits certain resemblances to lethargic encephalitis, which makes it of peculiar interest at the present time. Not only are the symptoms in some respects similar to those of the human disease, but also the pathologic anatomy, as described by Joest and Deegen,[1] is much the same as that of lethargic encephalitis. In both diseases there is an absence of recognizable anatomic changes outside the central nervous system, in which in each the conspicuous feature is a marked perivascular infiltration of small round cells, without polymorphonuclear infiltration or much involvement of the meninges. The vascular lesions are chiefly in the brain, the cord being much less involved. Numerous studies of the equine disease have left the etiology undetermined. While some have attributed it to an intoxication from infected food, several others have found cocci in the nervous tissues. A recent investigation of enzootic encephalitis in Argentina [2] has corroborated the previous anatomic studies and in addition has led to the isolation of a gram-negative diplococcus which produces what seems to be the same disease when injected subdurally into horses. In view of our complete lack of knowledge concerning the etiology of lethargic encephalitis, there is no little interest in this demonstration that a coccus, resembling somewhat the meningococcus, is capable of producing a marked nonsuppurative cerebral perivascular round cell infiltration, despite the fact that no such organism has been found in the human disease.

Association News

NEW ORLEANS SESSION

Sailing of S. S. Comas Cancelled

The Passenger Traffic Department, Southern Pacific Lines, advises that owing to labor disturbances at New York, it has been compelled to cancel the sailing of the S. S. *Comas*, which was scheduled to leave the port of New York, Wednesday, April 21, for New Orleans. Refunds may be secured on presentation of tickets at 165 Broadway, Room 2015, New York City, or if desired, the department will arrange for your trip to New Orleans by rail.

1. Joest and Deegen: Ztschr. f. Infektionskr. d. Haustiere **9**: 1, 1911.
2. Kraus, R.; Kantor, L., and Quiroga, R.: Sobre la etiologia de la meningo encefalitis enzootica (Enfermedad de Borna) de los equinos, Rev. d. Instituto Bacteriologico del Departamento Nacional de Higiene **2**: 239 (Oct.) 1919. For further reference see page 1198, this issue.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Beck in Los Angeles.—Dr. Emil G. Beck, Chicago, spoke before the Los Angeles Surgical Society, February 18, on "The Balance of Power in Immunity."

State Board Upheld.—A decision by the State Supreme Court of California has upheld the board of medical examiners in its action, two years ago, in suspending for one year the license of Dr. John K. Suckow, Los Angeles, on the ground that he had performed an illegal operation. The case was appealed to the higher court on the grounds that the board was not qualified to administer punishment and that the defendant had done nothing to merit suspension. Both of these claims were rejected.

State Society Meeting.—The annual meeting of the Medical Society of the State of California will be held at Santa Barbara, May 11, 12 and 13, under the presidency of Dr. Henry A. L. Ryfkogel, San Francisco, with headquarters at the Hotel Ambassador. Dr. Noble W. Jones, Portland, will discuss the "Prognosis After the Removal of Focal Infections;" Dr. Russell D. Carman of the Mayo Foundation, Rochester, will talk on the "Roentgenologic Aspect of Gastric and Duodenal Ulcers," and Edward C. Kendall, Ph.D., also of the Mayo Clinic, will speak on "A Chemical Consideration of the Thyroid."

Personal.—Dr. Wilfred H. Kellogg, Sacramento, who resigned as secretary of the state board of health last month, was appointed director of the state hygienic laboratory, Berkeley, April 3.——Dr. Robert K. Macklin, Pasadena, has just been discharged from the Letterman Hospital, San Francisco, after a long treatment for injuries received overseas. He was honored by fifty of his fellow practitioners from Los Angeles, March 28, who presented him with an automobile fully equipped.——Dr. Harry W. Martin, Los Angeles, sustained a fracture of the spine while diving into shallow water at the Bimini Baths near Los Angeles, April 19.

ILLINOIS

Chicago

Low Death Record for Chicago.—Health Commissioner Robertson announced on April 6 that the death rate for 1919 was 11.75 per thousand. The previous low record was 13.95 in 1904.

Crerar Library Closed.—The board of directors of the John Crerar Library announces that as it has been unable to secure an extension of its lease, the library will be closed May 1. It will be reopened as soon as the new building at the corner of Michigan Boulevard and Randolph Street is ready for occupancy. At present this is expected to be by September 1.

Illegal Practitioners Fined.—David Hertz of 2015 Potomac Avenue was arrested by the Department of Registration and Education of the State of Illinois, for practicing medicine without a license and was fined $25 and costs.——Mrs. Katrina Smish of 4933 South Robey Street was also arrested by the department and fined $25 and costs for practicing midwifery without a license.

Physicians Exonerated.—Dr. Ira R. Willets was exonerated by a coroner's jury, April 14, in the case of Blanche Warner who died April 1 at the German Deaconess Hospital from a supposed illegal operation.——A coroner's jury on April 16 recommended the release of Dr. William James Mitchell, held in custody in connection with the death of Mrs. Marie C. Hopkins. Dr. Mitchell was considered entirely free from blame.

Local Committee Organized for Relief of Vienna.—A Vienna Relief Committee has been organized to solicit funds for the relief of the starving inhabitants of Vienna, and an appeal has been issued through the secretary, Dr. Carl Beck. The circumstances of this once beautiful city are indeed pitiful. "She has become a dark and dreary place—the dreariest on earth. Resurrection seems hopeless," says a

letter from Dr. Adolf Lorenz and Prof. Anton Eiselsberg. The address of the relief committee is 1826 Conway Building.

MARYLAND

City to Open New Clinic.—The Baltimore City Health Department has recently opened a clinic at 2000 North Charles Street, especially for persons supposed to be suffering from tuberculosis. The municipal tuberculosis dispensary at 1418 Light Street, closed during the war, has been reopened by the health department. Commissioner C. Hampson Jones reports that the department now has four tuberculosis clinics in operation. The clinics are in charge of Dr. John E. O'Neill, physician in charge, Dr. Bartus T. Baggott, assistant physician, and Miss Anna L. Murphy, nurse.

Plans for Municipal Hospital.—Announcement has been made by Surgeon-General Ireland of the Army that the U. S. Army General Hospital No. 2, at Fort McHenry, will be given up by the Army June 1 and turned back to the War Department as "surplus property." In view of the fact, the mayor of Baltimore has named a committee composed of Dr. John M. T. Finney, chairman; Drs. Arthur M. Shipley, Winford H. Smith, Henry B. Thomas, C. Hampson Jones, and several prominent laymen, to inaugurate a movement to obtain the hospital buildings at the fort for a municipal hospital.

Measles On Increase.—Measles is claiming the attention of the Baltimore City Health Department; 216 new cases and two deaths having been reported during the past week. The situation is being watched closely because of the serious complications—frequently bronchopneumonia—that follow carelessness in handling cases of measles, which is approaching the epidemic stage in the city. Scarlet fever also appears to be on the increase, the new cases for the week numbering forty-eight. There were twenty-six cases of diphtheria and twenty-seven cases of chickenpox. Influenza lingers, the records of the department showing thirty-eight cases and four deaths.

County Districts Face Shortage of Physicians.—Unless steps are taken to offset the advantages offered by the large cities to young men entering the medical profession, the country districts will, in the near future, be without competent physicians, according to a statement recently made by Dr. John Whitridge Williams, dean of the Johns Hopkins Medical School. To meet the situation, he suggests the establishment by counties or by the state of public health centers, whose physicians and nurses would be paid regular salaries to supplement their incomes from regular practice. Some such arrangement as this will have to be made in the not distant future or the country districts will be without a sufficient quota of physicians.

Personal.—Dr. Adrian S. Taylor of the faculty of the Johns Hopkins University, and Drs. Ralph G. Mills and Charles W. Young, graduates of the Johns Hopkins Medical School, will leave June 5 to do medical work at University Hospital, Nanking, China. Dr. Thomas Dwight Sloan of the University Hospital, Nanking, recently addressed members of the Johns Hopkins Christian Association on "The Progress of Medicine in China."——Dr. John M. T. Finney will sail for London in June.——Drs. Harry W. Wheaton, Baltimore, and George F. Sargent, Towson, assistant physicians at the Sheppard and Enoch Pratt Hospital, Towson, have resigned.——Dr. Martin W. Peck, Towson, has been appointed assistant physician at the Sheppard and Enoch Pratt Hospital.——Dr. Elmer V. McCollum, Ph.D., has been made a corresponding member of the Royal Academy of Belgium.——At the recent commemoration day exercises of Johns Hopkins University, a portrait of Dr. John Whitridge Williams, dean of the medical school, was presented to the university by Dr. William H. Welch, and a portrait of Dr. Florence R. Sabin, professor of histology, was presented by Dr. William H. Howell.

MASSACHUSETTS

Personal.—Dr. Edward P. Hand, formerly city physician of Holyoke, has been elected physician to the Tuberculosis Hospital and has been succeeded by Robert E. Cleary.

Bill to Raise Standard Rejected.—By a vote of fifteen to seventy-one the house of representatives, March 31, refused to substitute for an adverse committee report the bill to raise the standard for the regulation of the registration of physicians.

Will Not Extend Vaccination Law.—By a vote of eight to seventeen, the state senate rejected the bill reported unanimously by the committee of public health to extend the provision of the compulsory vaccination law to pupils in private schools.

Report of the Cancer Commission of Harvard University.—The seventh annual report—1918-1919—of the Collis P. Huntington Memorial Hospital for Cancer Research states that the work of the institute during the two years included in the report was considerably curtailed, owing to the call of the war on the members of its staff. With the return of peace, reorganization of all research work has been going on. The facilities of the organization have been insufficient to accommodate the public, because of the interest being taken by the public and the medical profession in the treatment of cancer by radium. Special attention has also been given, during the past year, to the establishment of a new roentgen-ray machine of great power for use in the treatment of cancer. In the biologic department, studies are being made of changes in the living cell, which is an indispensable prelude to the study of the nature of cancer. A new building is proposed for the housing of the new roentgen-ray equipment. During the coming year the commission proposes to maintain its hospital for the investigation of the treatment of cancer and allied diseases and to make a special study of the use of radium and of the new roentgen-ray apparatus.

MICHIGAN

Personal.—Dr. Wynand Van K. Pyle, Grand Rapids, has returned after two years' service with the 339th Infantry in Russia.

Society Meeting.—The annual meeting of the Michigan State Medical Society will be held at Kalamazoo, May 25 to 27, under the presidency of Dr. Charles H. Baker, Bay City.

Tuberculosis Clinic.—A free clinic for tuberculosis is being conducted at Ludington under the auspices of the state antituberculosis society and is under the charge of Dr. Edwin R. Van der Slice, Lansing.

District Versus Divisional Plan.—The Detroit Department of Health, in its *Weekly Review* of April 10, says that theoretically, if a nurse is confined to a district and performs all service—school, tuberculosis, contagion, infant welfare, and prenatal—within the district, more will be accomplished than if the same nurse confines herself to one service and covers a wider territory. During the three months' trial of the district plan in Detroit, the following figures show that more nursing service is actually being performed under the new system:

FIELD NURSING SERVICES PER NURSE PER MONTH

	Divisional Plan	District Plan
School and contagious disease	140	316
Infant welfare and prenatal	152	226
Tuberculosis	101	90

MINNESOTA

Clinical Club Organized.—The younger physicians of Minneapolis have organized the Minneapolis Clinical Club and elected the following officers: president, Dr. Stanley R. Maxeiner; vice president, Dr. Clifton A. Boreen, and secretary-treasurer, Dr. Floyd O. Woodward.

Forty Fellows Enrolled.—The Mayo Foundation of the University of Minnesota has forty scholars and fellows enrolled for a full three years' course leading to a graduate degree. These men get an annual allowance, which is paid out of the endowment fund of the foundation.

Personal.—Dr. C. L. Martin has resigned his fellowship in the Mayo Foundation, Rochester, to take charge of the surgical work at a hospital in Wayne, Neb.——Dr. J. C. McRae has been granted a leave of absence for one year by the Mayo Foundation to accept a commission with the American Red Cross.

MISSOURI

Personal.—Dr. Eugene Lee Myers has resigned from the staff of the St. Louis College of Physicians and Surgeons.——Dr. Harry L. Ratliff, Webb City, superintendent of the Jackson County Tuberculosis Hospital, has resigned.——Dr. Owen P. McPherson, Kansas City, has recently received the Medal of the First Order of St. Sava, from the Serbian government.——Dr. David Wise, Joplin, was seriously cut and bruised about his head and shoulders, March 28, when another automobile collided with his coupé.——Dr. Karl E. Baker, Carthage, has been appointed commissioner of health for Jasper County.

State Society Meeting.—The sixty-third annual meeting of the Missouri State Medical Association was held in Jefferson City, April 6 to 8, under the presidency of Dr. Nimrod P. Wood, Independence. St. Joseph was selected as the next place of meeting and the following officers were elected: president, Dr. Wilson J. Ferguson, Sedalia; vice presidents, Drs. Robert L. Neff, Joplin, Thomas J. Rigdon, Kennett, Thomas Chowning, Hannibal, W. C. Taylor, St. Louis, and James Q. Chambers, Kansas City; secretary, Dr. Edward J. Goodwin, St. Louis (reelected); treasurer, Dr. J. Franklin Welch, Salisbury, and delegates to the American Medical Association, Drs. Franklin E. Murphy, Kansas City, Stuart L. Baysinger, Rolla, Charles R. Woodson, St. Joseph, and Elsworth S. Smith, St. Louis. The association adopted a resolution asking the governor and state legislature to establish a hospital at Columbia as part of the Missouri University Medical School to offer four years' work instead of the two years' course in the present university hospital.

NEW YORK

Health Conference Postponed.—The annual conference of health officers, which was to have been held June 22 to 24, has been postponed and will probably convene in September.

Personal.—The home of Dr. Joseph A. Blake, Tarrytown, was destroyed by fire on April 10, causing damage estimated at $100,000. Dr. Blake's hands were severely burned while he was endeavoring to prevent the spread of the flames.

Report of State Hospital Commission.—The annual report of the state hospital commission for the last fiscal year shows that in spite of the fact that $1,033,380 was spent last year for new construction, repairs and improvements to the institutions belonging to the state, the overcrowding is still 21 per cent. beyond their certified capacity.

Drive for Mental Defectives.—A drive to raise $250,000 has been begun by the Home and Farm Institution for Mental Convalescents, Inc., with headquarters at 198 Broadway. Twenty-five nonsectarian organizations are taking part in the campaign. A site in Sullivan County has been donated by Joseph B. Olidort who is heading the campaign.

Hearing on Narcotic Drug Bill.—A hearing on the bill of Senator Cotillo was held before the senate health committee on April 15, at which the bill met with a good deal of opposition from certain representatives of the medical profession. The bill is in line with the federal law and forbids the prescribing of narcotic drugs to addicts in the regular course of practice. The measure was endorsed by the house of delegates of the Medical Society of the State of New York at its recent meeting.

Health Centers Approved.—The New York State Charities Aid Association has passed resolutions endorsing the Sage-Machold bill, now pending in the legislature, which provides for a comprehensive extension of the public health work of the state through the establishment of a statewide system of health centers, with an appropriation of state funds to supplement the expenditures made by communities in carrying on this work. The purpose of the bill is to take modern medical, laboratory, hospital and dispensary facilities to the doors of the people of moderate means and those who live in rural and industrial communities.

New York City

Dispensary Clinical Society Organized.—The medical and surgical staff of St. John's Hospital, Brooklyn, have organized the dispensary Clinical Society at St. John's Hospital with Dr. Harry P. Mencken, Flushing, chief of the dispensary service.

Association of Tuberculosis Clinics Meets.—This organization met in the New York Academy of Medicine on the afternoon of April 14. Among the speakers were Drs. Isaac Ogden Woodruff, James Alexander Miller, Alfred F. Hess, Dwight C. Martin and Geza Kremer.

Postgraduate Fund Grows.—The endowment committee of the New York Post-Graduate Medical School and Hospital announces that it has raised $610,000 of the $2,000,000 needed. The committee has resolved on intensified efforts to reach the goal set. The present campaign has drawn much attention to the lack of opportunity for graduate study for men of moderate means as contrasted with the provisions made for undergraduate study for poor boys.

Personal.—Dr. Seth M. Milliken, who was recently sued by a patient for $200,000 for alleged false imprisonment in the psychopathic ward of Bellevue Hospital, has been exonerated by a supreme court jury.——Dr. H. Holbrook Curtis is seriously ill at his home on Central Park West.——Dr. George E. Brewer was shot and wounded in the leg by the man who killed Dr. James W. Markoe in St. George's Protestant Episcopal Church, April 18.——The National Academy of Science, at its annual meeting, April 22, conferred a gold medal on Dr. Alexis Carrel.——Dr. Benjamin Jablons has returned after an absence of five years during which time he served with American Ambulance Hospital, Paris, and later with the American Expeditionary Forces in France.——Dr. Bruno S. Horowicz, assistant sanitary superintendent of the Staten Island Health Department, has applied to the courts to have his name changed to Bruno S. Harwood.——Dr. Louis Berlin, Bay Ridge, has been cited by the French government as Officier de l'Académie with silver palms.

OHIO

Clinic for Venereal Diseases.—Cleveland announces that it will open a clinic for the diagnosis and treatment of venereal diseases at Fairview Park Hospital, May 25.

Drug Suspects and Drugs Seized.—In a drug raid in Toledo, April 8, city detectives seized $30,000 worth of morphin and opium and arrested a woman and four men accused of smuggling these drugs from Canada.

Medical Building for Columbus.—Plans have been drawn for a medical office building to be erected on East State Street, Columbus, just east of St. Francis Hospital at an estimated cost of $250,000. The building will be a four story, fireproof structure containing eighty offices.

Graduate Courses in Medicine and Surgery.—Western Reserve University School of Medicine, Cleveland, has announced courses of two months' duration in medicine and surgery during next June and July. Satisfactory completion of the courses by graduates in medicine will establish credits toward the A.M. degree in medicine.

State Association Meeting.—The seventy-fourth annual meeting of the Ohio State Medical Association will be held in Toledo, June 1 to 3, under the presidency of Dr. James F. Baldwin, Columbus. The annual orations will be delivered by Dr. Lewellys Franklin Barker of Johns Hopkins University on "High Blood Pressure, Its Causes and Management," and by Dr. Hugh Cabot, Ann Arbor, formerly of Boston, on "Non-Tubercular Infections of the Kidney."

County Buys Hospital.—The sale of the Springfield Lake Tuberculosis Sanatorium was consummated March 23, when Summit County purchased the interests of the other joint owners, Mahoning, Stark, Columbiana and Portage counties. For their respective shares, Mahoning received $90,690.29; Stark, $80,011.21; Columbiana, $44,038.32, and Portage, $25,068.95. Each county is given a year in which to remove its patients with the exception of Stark which has been given two years. Each county will also pay a weekly rate for its patients remaining during this period.

Personal.—Dr. George W. Wood, Wilmington, has been appointed resident physician at the Ohio Soldiers and Sailors Orphan Home, Xenia.——Dr. Robert H. Grube, Xenia, has been elected president of the Association of Health Commissioners of Southwestern Ohio, and Dr. Charles H. Tate, Dayton, has been elected secretary.——Dr. Delos W. Hogue has been appointed medical supervisor of the public schools of Springfield.——Dr. Rollin D. Worden, Ravenna, has been appointed commissioner of Portage County exclusive of Ravenna City.

Occupational Diseases Must Be Reported.—An amendment to the occupational disease reporting law, which becomes effective May 4, provides a penalty for physicians who refuse or neglect to report occupational diseases to the state board of health. By the terms of this bill, any physician who is attending or called to visit a patient whom he believes to be suffering from lead poisoning, poisoning from phosphorus, arsenic, brass, wood alcohol, mercury or their compounds, from anthrax, compressed air illness or from such other occupational diseases or ailments as the state department of health shall require to be reported, must make such reports to the state health commissioner within forty-eight hours from the time of the first visit, giving the name, address and occupation of the patient, the name and address in business of the employer, and the nature of the disease. It further establishes a penalty for the neglect or refusal to obey this law, a fine not to exceed $100 or imprisonment not to exceed ninety days. These reports are to be made on the standard schedule blanks provided and distributed by the state department of health.

Cincinnati

Trachoma.—Dr. Oscar M. Craven, medical director of the health department of Cincinnati, reports that forty-two positive cases and twenty-four suspected cases of trachoma have been found in the city.

Physicians Honored.—Drs. Byron Stanton, Stephen C. Ayres, John C. MacKenzie and A. O. Mathews were made honorary members of the Cincinnati Academy of Medicine at its meeting April 5. Dr. Stanton has been a member of the academy for sixty-three years.

Illegal Practitioners Prosecuted.—It is reported that E. C. Branch was convicted, March 24, 1920, in the municipal court of Cincinnati, of the illegal practice of medicine and surgery. He was fined $50 and costs.——Michael Jordan was found guilty of the illegal practice of medicine and was fined $100 and costs by the municipal court of Cincinnati.

Organ of Academy of Medicine Appears.—The first issue of the *Cincinnati Journal of Medicine*, the official organ of the Cincinnati Academy of Medicine, has appeared under the editorial charge of Dr. Charles L. Bonifield. The initial number carries, practically in full, the report submitted by a special committee of the Cleveland Academy of Medicine outlining a comprehensive plan for the extension of functions and activities of the local medical society.

PENNSYLVANIA

Coeducation at the University of Pennsylvania.—An official communication from the University of Pennsylvania refers to the item published in Pennsylvania news, in THE JOURNAL of March 27, conveying the idea that the faculty is opposed to coeducation. The statement says that the news item is a gross exaggeration and relates the facts as follows: "One of our classes adopted a resolution stating that the class was opposed to coeducation in the school of medicine and desired to be so recorded. No such action has been taken by the other three classes and no objection has been raised by any member of our faculty to the best of my knowledge and belief."

Renew Fight on Hospitals.—The Anti-Sectarian Appropriations Association's fight against payment of state money to alleged sectarian hospitals and homes was renewed April 8. Willis Collins of Norwood, secretary of the body, brought mandamus proceedings in the Dauphin county court, Harrisburg, to prevent State Treasurer Kephart's paying appropriations made by the legislature in 1919 to five institutions, including two in Philadelphia. Similar action was brought by Collins last August against more than sixty institutions, but the court sustained the Attorney-General's contention. The suits today are each against a single institution and raise the question of legality of appropriations to institutions on the ground that they are denominational or sectarian. The actions are against the Jewish Hospital Association of Philadelphia which was voted $30,000; the Sisters of Mercy, who have charge of the Dubois Hospital, $25,000; Duquesne University of the Holy Ghost of Pittsburgh, $50,000; the Protestant Deaconesses, and Evangelical Lutheran body operating Passavant Hospital, Pittsburgh, $32,000, and St. Timothy's Memorial Hospital and House of Mercy, Roxborough, an Episcopal institution, $50,000. The Attorney-General's department accepted service of the papers and will file an answer in thirty days.

Philadelphia

Northern Medical Association Meets.—The seventy-fourth anniversary of the Northern Medical Association will take the form of an Italian dinner to be held at Leoncovallo Café, May 20. The guests of honor will be the deans of the Philadelphia medical colleges.

Money for Insane Asked.—Dr. C. Lincoln Furbush, director of public health, submitted to the council an ordinance to appropriate $50,000 for the department for the insane of the Philadelphia General Hospital. Ernest L. Tustin, director of public welfare, submitted an ordinance to transfer $89,000 from the department of public welfare for improvements at the house of correction.

Civil Service Report.—The Civil Service Commission made public the result of examinations for the position of superintendent of the new Bureau of Hospitals in the Department of Health. This post, paying $5,000 a year with free house rent, food and fuel, is one of the choicest places in the classified service. Only two of the twelve who took the examination obtained more than the required average of 70. They are Dr. John D. Jungmann and George C. Signor. Most of those who took the examination also tried for the appointment as assistant superintendent, which pays $3,000.

Fifty Thousand Dollars to Clean Up Streets.—To enable him to prosecute the war he has declared on municipal filth, Dr. C. Lincoln Furbush, director of public health, will ask the council for a large additional appropriation for the abatement of nuisances, which he will use in the elimination of insanitary conditions wherever they exist in the city. In making that announcement, Dr. Furbush indicated the sum he would ask would probably be $50,000. There was need, he said, of from $50,000 to $100,000 for the abatement of nuisances in addition to the amount available for that purpose.

Personal.—Dr. Samuel W. Woodhouse, a graduate of Jefferson Medical College, has been appointed keeper of the collections of the Pennsylvania Museum and School of Industrial Art.——Dr. Ellen C. Potter, medical director of the Woman's Medical College Hospital, has been appointed chief of the division of child health, state department of health, to succeed Dr. Dorothy Child, resigned.——Dr. Joseph S. Neff, former director of public health and charities, has resigned as a member of the advisory council of the state health department, as he sails for Europe shortly.——Dr. William Hewson has been appointed electrocardiographist at the pathologic laboratory of the Philadelphia General Hospital.

TENNESSEE

New State Officers—The eighty-seventh annual meeting of the Tennessee State Medical Association was held in Chattanooga, April 6 to 8, under the presidency of Dr Andrew F. Richards, Sparta. Nashville was selected as the meeting place for 1921, and the following officers were elected: president, Dr. Leon L. Sheddan, Knoxville; vice presidents, Dr. George R. West, Chattanooga, for east Tennesse; Dr. Powell K. Lewis, Doyle, for middle Tennessee, and Dr. John J. Shea, Memphis, for west Tennessee; trustee of the journal, Dr. Charles J. Broyles, Johnson City (reelected); secretary, Dr. Olin West, Nashville (reelected), and treasurer, Dr. Joseph F. H. Gallagher, Nashville (reelected).——The eye, ear, nose and throat section of the association elected Dr. Edward C. Ellett, Memphis, chairman; Dr. Eldred B. Cayce, Nashville, vice chairman, and Dr. Louis Levy, Memphis, secretary.

CANADA

Military Hospital Closed.—The Saskatchewan Military Hospital, Moose Jaw, has been closed.

New Medical Building for Alberta University.—Draft plans for the erection of a new medical building for Alberta University, Calgary, to cost $750,000, have been prepared.

Smallpox Ban Lifted.—The smallpox ban between Sault Ste. Marie, Ont., and Sault Ste. Marie, Mich., has been lifted so that it is not necessary for Americans visiting the Canadian side to be vaccinated or show certificates of vaccination before returning to the United States.

Extension Asked for Medical College.—A deputation from the University of Manitoba has petitioned the government to consider the provision of an extension to the medical college and to grant an appropriation this year for preliminary steps in connection with the new university at Tuxedo. The addition will be for laboratories.

Provincial Health Laboratory.—The government of British Columbia is establishing a provincial health laboratory, one branch of which will be in connection with the Vancouver General Hospital under the charge of Drs. John A. E. Campbell and Gibbs, and the other to be attached to the Royal Jubilee Hospital, Victoria, under the charge of Dr. Miller.

Personal.—Dr. Harold Orr, Medicine Hat, Alta., has been appointed by the provincial government to take charge of the administration of the venereal disease act, and clinics will be located at Edmonton, Calgary, and if need be at Medicine Hat and Lethbridge.——Dr. John Park has been reelected chairman of the Edmonton, Alta., Board of Health.——Dr. Wallace H. Cunningham has been appointed medical officer to the board of education of St. Catherine's, Ont.

GENERAL

Book Plates Wanted.—THE JOURNAL would be glad to receive copies of the book plates of physicians, of medical libraries, or of medical institutions, for use in a review of the subject. Copies of the book plates of noted physicians, now dead, will be especially appreciated. Mark envelop—"BOOK PLATE."

Health Authorities to Meet.—The eighteenth annual conference of state and territorial health authorities with the U. S. Public Health Service will be held in Washington, May 26 and 27.

Pediatric Society Meeting.—The thirty-second annual meeting of the American Pediatric Society will be held at the Moraine Hotel, Highland Park, Ill., May 31 and June 1 and 2, under the presidency of Dr. Thomas S. Southworth, New York City.

Medical School Recognized.—Inadvertently the name of the University of Illinois School of Medicine was omitted from the revision of Table D which appeared last week in the State Board Statistics. This medical school should have been included among those that are recognized in all states.

Social Hygiene Workers Needed.—The United States Civil Service Commission announces examinations for the following positions under the interdepartmental social hygiene board, receipt of application for which will close, May 4: director of bureau of the division or section of protective social measures, salary $3,500 to $4,500 a year; supervisor of protective measures, salary $2,000 to $3,600 a year; field agent, protective social measures, $1,800 to $3,000 a year, and special assistant agent, protective social measures, salary $900 to $1,500 a year. An examination will also be held on May 5 to fill positions of field agent in protective social measures, under the auspices of the board, with salaries ranging from $1,200 to $3,000. Further information may be obtained from the United States Civil Service Commission or from local civil service boards.

Vocational Rehabilitation.—Final legislative action has been taken in the Senate and House on the bill to establish vocational rehabilitation of persons injured or disabled in industry from any cause. This legislation will give federal and state aid to all persons who are suffering from physical defect, injury or disease, and who are partially or totally incapacitated from remunerative occupations. This aid will include the training and instruction of such persons for entering gainful occupations. The work is to be carried on under the direction of the federal board of vocational training. This board is to cooperate with vocational training boards of the several states, and the sum of $1,000,000 is apportioned among the several states according to the population of each state. Each state is required to expend an amount equal to that expended by the federal government. The bill has passed both the Senate and House and awaits the report of the conference committee before going to the President.

Bequests and Donations.—The following bequests and donations have recently been announced:

University of Cambridge, England, a donation of $100,000 for the erection and equipment of an institute for parasitological research, with an additional $50,000 for its upkeep and maintenance, by Mr. and Mrs. A. P. Molteno.

The Ontario Honorary Advisory Council for Scientific Research has made provision for forty bursaries, studentships, and fellowships to be awarded to qualified science graduates who will prepare for a career in scientific research in connection with the natural resources of Canada.

Toronto General Hospital, a donation of $250,000 toward lifting the debt on that institution, by Sir Joseph Flavelle.

Grant Hospital, Chicago, $10 000, Alexian Brothers Hospital, Chicago, $5,000 by the will of Jacob Birk.

Emergency Hospital, Chicago, $400,000 by the will of Captain Charles Haines, St. Charles, Ill.

Henry Phipps Institute, Philadelphia, a donation of $500,000 by the family of Henry Phipps.

Home for Aged Protestant Women and Home for Aged Persons, Nashua, N. H., each $312,500, by the will of Miss Mary E. Hunt, Nashua.

St. Vincent's Hospital, New York City, $100,000; Cancer Hospital, New York City, and Brooklyn Hospital, $25,000; Brooklyn Home for Consumptives, $20,000, by the will of Daniel J. Carroll, New York City.

Sheppard-Towner Bill.—National support and stimulation of maternity and child welfare are the objects of Senate Bill No. 3259, which has already had two readings in the Senate and has been referred to the committee on public health and national quarantine. This bill authorizes the appropriation of $480,000 each year, $10,000 to be paid annually to each state for the establishment and admjnistration of boards of maternity and infant hygiene. In addition, it provides for the appropriation of $2,000,000, increasing about $400,000 annually after five years, to be apportioned to various states according to population, and not to be available unless matched dollar for dollar by state approprition. The bill aims at cooperation with the several states in the promotion of the care of mothers and children; instruction in hygiene of maternity and infancy and the establishment of a federal board of maternity and infant hygiene for the administration of the act and to make investigation, studies and reports on related subjects.

FOREIGN

Hospital at Omsk Closed.—The American Red Cross Hospital at Omsk, Siberia, has been evacuated and the patients taken to the Cadetsky Corpus Hospital, Omsk. During the nine months' existence of this hospital, 6,009 patients received treatment.

The Lannelongue Prize.—Prof. D. Giordano of Venice has been invited to be a member of the jury to award the Lannelongue prize (5,000 francs and a gold medal) offered by the French Surgical Association to the surgeon who has made the greatest discovery or done the most important work of the preceding five years.

Rockefeller Foundation Donation to Vienna Sufferers.—In response to a telegram from Dr. Linsly R. Williams of Johns Hopkins University, in which he states that more than 3,000 physicians are destitute and only 200 of the most pitiable cases can be taken care of by the American fund, the Rockefeller Foundation has made a donation of $10,000.

Hospital Wing Named for Red Cross Worker.—One of the wings of the new municipal hospital, Lens, France, has been named after Miss Ella Harris, Philadelphia district manager of the American Red Cross, in that district of devastated France. The other three wings of the hospital are named after Premier Clemenceau, Marshal Foch and the mayor of Lens.

Epidemic Diseases.—Typhus fever is said to be ravaging eastern Galicia. During January and February 45,000 cases were reported.——Cholera and dysentery have broken out in Feodosia, Sebastopol and other cities of the Crimea, in addition to typhus fever, which is already epidemic. Sebastopol is virtually without water as it is dependent on a distilling plant which is out of service on account of lack of fuel.

Personal.—It is reported that Dr. Lorrin A. Shepard, held as hostage by Turks after the withdrawal of a French relief column from Aintab, has been released.——Dr. L. W. D. Jackman, said to be a medical missionary at Sadiya, Assam, is reported to have been sentenced to two years' imprisonment for having shot and killed Major H. D. Cloete. Evidence was produced to show that Dr. Jackman committed the deed on hearing his wife's confession of infidelity.

Lectures on Tuberculosis in Children.—A special course on tuberculosis in children will be given at the Hospital for Sick Children, 149 Rue de Sèvres, Paris, May 4 to June 12, by Drs. H. Méry, P. Armand-Delille and L. Girard of the hospital staff. Lectures will be delivered at 5 p. m. on three days in each week, Tuesday, Wednesday and Thursday, and will embrace discussions of the etiology, pathology, varieties, diagnosis, prevention and treatment of the disease.

Child Welfare Work in Belgium.—A national children's bureau has been established in Belgium. The bureau is directed by a board of forty members, called the "Conseil supérieur des œuvres de l'enfance." This board has the decision on all questions relating to the protection of children; it issues orders concerning the functions of subsidized agencies; it takes necessary measures for the protection of children within the limits of the law; and determines the use of funds at the disposal of the bureau.

Taking Medicines Out of Poland.—Health Commissioner Louis E. Van Norman, at Warsaw, reports that grave concern is being manifested by the Polish Medical Association over the large amount of medical supplies that are constantly being taken out of the country both east and west. The country women, who formerly brought in constant supplies of herbs to the drug stores in Warsaw, are reaping fortunes by selling their agricultural products at high prices, so that they no longer bother with selling herbs. The medical association is preparing a memorandum to the government asking for the infliction of severe penalties for taking medical supplies out of the country.

New Archives for Internal Medicine Launched in Vienna.—A bulky journal of 210 pages, 6 by 10 inches, has reached us as the first issue of the *Wiener Archiv für innere Medizin*, published by twenty-four internists connected with the universities of Vienna, Prague and Innsbruck. Profs. W. Falta and K. F. Wenckebach (Frankgasse 2, Vienna) are the editors. The *Archiv* is to be issued irregularly, thirty to forty printed forms forming a volume; subscription price 54 marks. Urban and Schwarzenberg, Maximilianstrasse 4.

Vienna, are the publishers. The six articles in the first number are on the pathology of the lungs, circulation, vegetative nervous system and on palpation of the pulse. They will be reviewed in the foreign literature department.

Tribute to Majocchi.—Prof. Domenico Majocchi of the chair of skin diseases and syphilis in the University of Bologna soon completes his fortieth years' incumbency, and his pupils and other friends are planning to present him with a gold medal on the anniversary. An appeal has been issued for contributions, signed by the president of the Italian Società di dermatologia e sifilografia, the president of the Associazione professionale dei dermosifilografi italiani, the president of the Ordine dei medici, the rector of the university and the head of the medical faculty and of the local medical society. The secretary is Prof. G. Pini, Via S. Stefano 18, Bologna. The tribute is to be a feature of the annual meeting of the Società italiana di dermatologia e sifilografia which convenes at Bologna June 6. The list of Majocchi's works fills about half a column in the Surgeon-General's Catalogue.

Deaths in Other Countries

Baron **Kanehiro Takaki,** M.D., formerly inspector-general of the Japanese navy and leader in military hygiene, especially in the eradication of beriberi from the navy. He studied medicine in England in the seventies and visited the United States in 1905. Honorary degrees were conferred on him by Columbia and the University of Pennsylvania among others, and he lectured in this country. His work "Military Hygiene in the Japanese Navy" was published at New York in 1906.——Dr. **A. Ceradini,** professor of bacteriology at the University of Turin and president of the Reale Società d'igiene, aged 44.——Dr. **P. Regard** of Geneva, aged 62.——Dr. **Ricardo Mesa Torres,** a prominent physician of Santiago, Chile.——Dr. **R. Schmucker,** medical head of the Rudolf Children's Hospital, Vienna, aged 67.——Dr. **L. Hauser** of Darmstadt, aged 75.——Dr. **E. Burchard,** a neurologist of Berlin.——Dr. **M. Stolz,** professor of gynecology at the University of Graz.——Dr. **M. Siegfried,** professor of physiologic chemistry at the University of Leipzig.——Dr. **T. Senise,** professor of medical pathology at the University of Naples, author of works on the symptomatology of the respiratory and cardiovascular systems, and senator, aged 72.——Dr. **M. Fürbringer,** professor of anatomy at Amsterdam, Jena and Heidelberg in turn, aged 74.——**James Pointon,** Southport, England; M.R.C.S. (Eng.), L.R.C.P. (Lond.), 1878; aged 69; senior medical officer of the Cunard Steamship Company; senior house surgeon to the Children's Infirmary, Liverpool, and honorary medical officer of the North Dispensary, Liverpool; surgeon of the Steamship *Royal George;* died at sea, April 11, from heart disease, and in accordance with his wishes, was buried at sea.

LATIN AMERICA

Leprosy in Venezuela.—According to the last report of the Office of Public Health of Venezuela there was a total of 720 lepers isolated in the two leprosariums of that country on Sept. 30, 1919.

Personal.—Dr. Pedro Alemán is now making a professional visit to New York City.——Dr. F. Vallarino, one of the physicians of the Santo Tomás Hospital of Panama, is now on his wedding trip in New York City.

Eugenics in Uruguay.—A bill has been introduced in Uruguay according to which no person will be able to marry unless he previously obtains a physician's certificate, showing the applicant is free from chronic, communicable disease.

International Sanitary Conference.—According to the provisional program for the Sixth International Sanitary Conference of the American Republics, to be held at Montevideo, Dec. 12-20, 1920, the following subjects will be discussed: sanitary laws and regulations adopted by the different countries since the fifth conference; enforcement of resolutions adopted at preceding conferences; report of the contagious diseases most prevalent in the different countries; measures adopted to prevent the introduction and the spread of bubonic plague; prevalence of cerebrospinal meningitis, infantile paralysis and lethargic encephalitis; present status of the campaigns against tuberculosis, yellow fever, malaria, trachoma and hookworm disease; data relative to leprosy and the measures taken to prevent its spread; present status of the campaign against venereal diseases; organization of the quarantine service in the different countries, and vital statistics of the different countries.

Government Services

Copies of Report of the Surgeon-General Not Available

According to law, only 2,500 copies of the report of the Surgeon-General can be printed, and additional copies cannot be printed without a special act of Congress. We are informed by Surgeon-General Ireland that all of the copies of the 1919 report have been distributed, and that it is impossible to obtain a special act for the printing of additional copies at this time.

The New Medical Reserve Corps

Commissions in the new Medical Reserve Corps are issued by the War Department only to those former medical officers who have applied either by means of the usual Form 150, accomplished at the time of discharge, or by formal application by letter to the Adjutant-General or Surgeon-General. Those who had service during the World War and who have not yet received commissions, should, if they desire to become members of the new Medical Reserve Corps, make application therefor by letter to the Adjutant-General of the Army.

The Medical Veterans of the World War

During March, 1920, 116 new members were admitted. The total membership now is 2,827.

Med. Corps, U. S. A.	1,337
Med. Corps, U. S. N.	56
U. S. Public Health Service	66
Contract Surgeons, Army	90
Act. Asst. Surgs. U. S. P. H. S.	48
Members Local Boards	531
Medical Examiners Local Boards	189
Members Med. Advisory Boards	510

Building for Army Medical School

The Army appropriation bill contains a provision for the expenditure of $500,000 for suitable buildings to be used by the Army Medical School on the Walter Reed Hospital grounds at Washington, D. C. It is left to the discretion of the Secretary of War and the Surgeon-General to determine the kind and character of such buildings. The bill carrying this appropriation has been favorably reported to the House of Representatives by the committee on military affairs. The same bill also contains a provision for the erection and completion of buildings at the Letterman General Hospital, San Francisco, in the amount of $94,900.

Work on Army Medical Center

Work on what is expected to be the largest medical center in the country will be started at Walter Reed General Hospital when plans now being drafted and calling for the assembling of the army medical school, nurse school, medical museum and library, at an estimated cost of $10,000,000 are put into effect, it was announced yesterday. As the commencement of the project depends on congressional appropriations, it will probably be late in the summer before the erection of the army medical school building, the first of the proposed structures, will be begun. An appropriation bill for $500,000 is now pending before Congress as the initial sum to cover the cost of this building.

It is proposed to purchase 40 acres of land to the north and west of the present hospital site and Congress has granted $350,000 for its purchase. The plans also call for the building of additional wings to the present main building. The work of medical reconstruction and physiotherapy will be carried on in the enlarged institution and an adequate headquarters will be provided for the entire hospital corps. When completed, the enlarged hospital established on a permanent basis will accommodate from 500 to 700 beds or more.

The main purpose of enlarging Walter Reed is to provide a central point for the entire medical work of the army.

With this idea in mind, medical authorities of the army will be able to carry out a plan of gathering together all the army medical agencies, the need for which has been felt for many years.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ALABAMA
Tuscaloosa—Collier, D. M.

COLORADO
Denver—Hayes, O.

ILLINOIS
Chicago—Guinea, W. E.

MASSACHUSETTS
Chelsea—Regan, W. F.

NEW YORK
Brooklyn—Grussner, A. S.

NORTH CAROLINA
Goldsboro—Hood, M. H.

TEXAS
Anson—Jones, A. M.

VERMONT
Burlington—Hogan, W. L.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

ARIZONA
Leupp—Warren, B. A. (C.)
Metcalf—Lien, F. O. (L.)
Salt River—Whiting, S. D. (C.)

ARKANSAS
Clarendon—Houston, M. F. (L.)
Eureka Springs—Tatman, A. E. (L.)

CALIFORNIA
Los Angeles—Chase, F. H. (C.)
Hartford, W. S. (L.)
Keyes, H. S. (M.)
Lucey, D. D. (L.)
Pasadena—Macklin, R. K. (L.)
Turlock—Collins, J. L. (L.)
Ventura—Mason, J. S. (L.)

COLORADO
Denver—Allen, K. D. (C.)

DISTRICT OF COLUMBIA
Washington—Cook, R. L. (L. C.)
Tobias, H. W. (M.)
Walker, L. A. (M.)

GEORGIA
Augusta—Stanley, R. H. (M.)

ILLINOIS
Chicago—Galland, W. H. (C.)
Kerr, N. (M.)

INDIANA
Mooresville—Brackney, M. F. (C.)

IOWA
Adel—Irvin, H. C. (C.)
Batavia—Baldridge, J. H. (C.)
Cedar Rapids—Aborn, C. E. (C.)
Davenport—Kulp, R. R. (L.)
Eldora—Nyquist, D. M. (L.)
Indianola—Simons, J. D. (L.)
Terril—Schooley, A. H. (L.)

KANSAS
White City—Goss, H. L. (L.)

KENTUCKY
Louisville—Percefull, A. C. L. (M.)
Stirling, W. C., Jr. (C.)

MARYLAND
Baltimore—Cummins, J. E. (L.)

MASSACHUSETTS
Boston—Brackett, E. G. (Col.)
Brookline—Townsend, D. (C.)

MICHIGAN
Flint—Scott, R. D. (L.)
Lansing—Rapp, J. H. (L.)
Onaway—Wastell, F. W. (C.)
Posen—Nevius, F. P. (C.)
Traverse City—Holliday, G. A. (C.)

MINNESOTA
Rochester—Plum, F. A. (C.)

MISSOURI
Adrian—Robinson, E. E. (L.)
Lamar—Allee, G. D. (C.)
Trenton—Kimberlin, H. C. (L.)

MONTANA
Kalispell—Little, W. S. (C.)
Stevensville—Fales, L. H. (C.)

NEBRASKA
Kearney—Strong, J. A. (C.)
Lincoln—Hickman, C. C. (L.)
North Platte—Wurtele, F. J. (M.)

NEW JERSEY
Camden—Moon, A. C. (C.)

NEW YORK
Brooklyn—Jablons, B. (M.)
Nafis, W. H. (M.)
Collins—Hadley, R. V. (L.)
New York City—Cotter, J. J. (C.)
Eldridge, W. W. Jr. (C.)
Newton, S. B. (M.)
Symonds, C. W. (L.)
Ogdensburg—Miller, C. R. (L.)
Rochester—Casey, M. L. (C.)
Troy—Panitch, W. (C.)
Yonkers—Butler, E. F. (M.)

NORTH CAROLINA
Fairmont—Price, H. L. (L.)
Mount Airy—Absher, D. C. (M.)

OHIO
Columbus—Busby, J. L. (L.)
Elyria—Smith, A. B. (M.)
Urbana—Smith, M. L. (L.)

OKLAHOMA
Ardmore—Gregory, D. A. (C.)
Muskogee—Fischer, W. O. (L.)
Pryor—Tilly, G. W. (C.)
Stillwater—Mallory, J. H. (L.)

OREGON
Bandon—Mann, S. J. (C.)

PENNSYLVANIA
Greensburg—Bell, W. S. (L.)
Harrisburg—Moffitt, G. R. (M.)
McDonald—Dixon, C. W. (C.)
New Castle—Brown, T. C. (L.)
Philadelphia—Artman, E. L., Jr. (L.)
Cadwallader, C. (L.)
Shimer, W. S. (C.)
Pittsburgh—Wishard, W. H. (L.)
Wilkes-Barre—McGinley, J. L. (L.)

TENNESSEE
Memphis—McMahon, B. C. (M.)
Waters, C. T. (L.)

TEXAS
Beaumont—Scheller, L. (L.)
Denison—Freels, A. M. (C.)
Stein, J. F. (L.)
Lufkin—Dillen, O. M. (L.)
Maryneal—Fillmore, H. D. (C.)
Montgomery—Covington, C. M. (L.)
Ralls—Harrison, F. (M.)
San Antonio—Fickessen, W. R. (C.)

VIRGINIA
Richmond—McCabe, J. L. (L.)

WISCONSIN
Madison—Hough, A. G. (C.)
Reedsville—Festerling, E. G. (C.)
Siren—Oliver, L. H. (L.)

Foreign Letters

PARIS

March 18, 1920.

Vaccines in Surgical Affections

At a recent session of the Société de chirurgie of Paris, there was an interesting discussion on the employment of vaccines in the treatment of carbuncles, especially by the method of Pierre Delbet. The latter combines Pasteur's method of attenuated cultures with the modern method of killed cultures. He found it possible by this means to inject a considerably larger dose, several billions of micro-organisms, at one time. Despite the massive dose, he has never observed any reaction analogous to that described by Wright as the negative phase, which Delbet thinks is the result of an excessive initial dose. On the contrary, certain toxic reactions were observed, often very violent, and despite their intensity, these were found to constitute a good omen. In the process of aging, the toxicity of the culture is probably attenuated though not entirely destroyed. After some attempts, Delbet fixed on 4 c.c., representing about thirteen billions of organisms, as a safe and effective dose. The vaccine is, naturally, a stock vaccine of streptococcus, staphylococcus and *Bacillus pyocyaneus* (the last in great abundance: eight billions). Delbet believes it unnecessary to use the specific micro-organism and, like Wright, he has not only abandoned autogenous vaccines, but he even questions whether better results are not obtained with a vaccine prepared from cultures of a micro-organism other than that which is the causative agent in a given case. The method has been employed since 1913, since which time no case of carbuncle in Delbet's service has been treated by surgical incision; boils, lymphangitis and erysipelas also respond very promptly to this treatment.

Professor Hartmann had occasion to employ the vaccine on himself for axillary adenitis. The after-pain was moderate, but for twenty-four hours the arm was virtually paralyzed. It seems to him that a crucial incision is indicated in certain advanced cases: in fact, in any case such intervention exerts a sedative influence on the pain.

Dr. Robineau found that on the day after injection the pain had subsided, palpation revealed that the carbuncle had decreased to half its original size, and the peripheral inflammation had disappeared. Recovery is usually complete in ten days, a distinct advantage over surgical treatment, by which relief from pain and recovery are not so promptly obtained. Dr. Grégoire recited his experiences with the vaccine in seventeen cases of subacute and acute osteomyelitis, leaving the severe toxic forms out of discussion. Fourteen resulted favorably, one was treated only recently, and two cases were partial failures in that sequestrums had formed. In some cases in which diffuse suppuration apparently threatened a joint, Dr. Grégoire made several punctures; the puncture fluid was at first frankly purulent, but gradually became of a viscous, albuminous character. In all cases, the temperature dropped in a few days after treatment, and the general condition improved rapidly. Recovery was effected in from thirteen to 178 days. One half of the patients were well in from thirty to sixty days. Dr. Ombrédanne declared that there should be left out of consideration, not only the severe toxic forms, but also the lighter acute forms susceptible of resolution, limiting ourselves to the acute suppurative forms which are usually treated by incision. In these cases he had variable results; besides some undoubted cures, he had complete failures and even disasters. Vaccinotherapy should be employed only after careful study of the indications. Professor Broca, on the contrary,

maintained that vaccines should be employed in severe cases, precisely because no harm can result. In a particularly bad case an extensive sequestrum was formed despite vaccinotherapy, and an operation was necessary, but the patient's life was saved, and Broca is persuaded that this was due to the vaccine.

The Printers' Strike and the Medical Press

From time to time in these pages have been recorded the difficulties with which the scientific press in general and the medical press in particular are now contending. For almost a month, these troubles have been aggravated by a strike of the printers. All of the large publishers of Paris have suspended. Fortunately, some of the medical journals are printed in provincial towns, and these are able to continue publication despite the strike. However, the *Presse médicale*, which is printed in Paris, has not been issued for three weeks, and the editors have announced that, depending on the circumstances and duration of the strike, they will later publish double numbers in the interests of their subscribers. Besides the periodical publications, many books are also delayed by the same strike.

The Red Cross Crusade Against Epidemics

At the first meeting of the General Council of the League of Red Cross Societies, held in Geneva, March 2-9, twenty-eight national societies were represented. It might be of interest to note that the same nations participated in the first council of the League of Nations. The general council decided to place at the top of the list of adopted resolutions the text of Article 25 of the constitution of the League of Nations, stipulating that the members of the League of Nations agree to encourage and further the establishment and cooperation of duly authorized voluntary national societies of the Red Cross. In the course of the session there was read an appeal from the League of Nations asking the Red Cross to combat the ravages caused by epidemics in central and eastern Europe. The council adopted a resolution expressing its full accord and complete sympathy with the suggestions, but pointing out that nothing could be done unless the necessary food, clothing and means of transportation were forthcoming. These the governments ought to provide; the League of Red Cross Societies on its part would seek the immediate extension of voluntary aid to the afflicted regions. The resolution closed with these words: This is the first time that, as the result of the collaboration of two great organizations, the League of Nations and the League of Red Cross Societies, there is born a more certain and adequate hope of the solution of the tragic problems that bring distress to the world.

LONDON

April 3, 1920.

The Association of Surgeons of Great Britain and Ireland

The formation of the Association of Surgeons of Great Britain and Ireland was described in a previous letter (THE JOURNAL, Feb. 21, 1920, p. 538). The first annual meeting will be held in London in May. The association exists for the "advancement of the science and art of surgery, and the promotion of intercourse and friendship among the surgeons of the United Kingdom." The number of fellows is not to exceed 250, and all must be engaged in purely surgical practice, in the teaching of surgery, or in surgical research. A fellow on ceasing to be a member of the active staff of his hospital will become a senior fellow, and will retain the privilege of attending the meetings. A general meeting will be held once a year, in May, in some town in the United Kingdom which possesses a university or medical school. The first meeting, and subsequently at least every third meeting, should be held in London. Fellows will be required to speak—not read—their communications, and will be allowed not more than fifteen minutes. No reporters are to be present, and no reports of the meetings are to be sent to the journals or newspapers. The first general meeting will begin at the Royal College of Surgeons of England, when the president, Sir John Bland-Sutton, will deliver an address. There will be a discussion on "The Ritual of the Surgical Operation." The specimens in the war collection in the museum of the Royal College of Surgeons will be exhibited by Professor Keith. Sir George Makins will speak on selected specimens of wounds of vessels, and Sir Cuthbert Wallace on gunshot injuries of the abdomen. Two afternoons will be spent at various London hospitals, where cases will be shown and operations witnessed.

A "Dog's Protection Bill"

The defeat of a "dog's protection bill" introduced into the House of Commons last year has already been reported. Nothing daunted, the antivivisectionists have made another attempt. Sir F. Banbury, in introducing the bill, reminded the house that similar bills had been read a second time on three previous occasions. The present bill was in the form in which it left the "standing committee" last year. Sir Watson Cheyne moved an amendment declining to proceed with a measure which would impose a serious obstacle to medical research. He pointed out that the reason the dog was chosen was that of all animals its physiologic processes approached that of man. The surgery of the brain had been built up by experimenting on dogs. The experiments which caused pain were very few indeed. After an attempt to move the closure, the bill was talked out. In a letter to the *Times*, Dr. Thomas Lewis points out that almost the whole modern progress in diseases of the heart hinges on experiments on dogs. Auricular fibrillation was first recognized in man as a result of experiments on six London mongrels. The next step to be discovered was what fibrillation actually is. That cannot be done with observation on patients; it can be done only by observing the condition of the exposed heart of an animal. Thanks to the defeat of the bill last year, this work has been for twelve months in progress, and we are within sight of the goal. Already we have obtained a deeper insight into the condition. Dr. Lewis' views were quoted with effect by one of the opponents in the present bill.

The National Health Insurance

Like everything else after the war, national health insurance has become much more expensive than it was before. Dr. Addison, minister of health, has introduced a bill into Parliament increasing the benefits in the case of men from $2.50 to $3.75 a week for sickness and from $1.25 to $1.75 for disablement. In the case of women the benefit is to be increased from $1.75 to $3. These benefits necessitate an increased contribution of 6 cents a week for each insured person, of which it is proposed to derive 4 cents from the employer and 2 cents from the employee. Sanatorium benefit is to be taken out of the insurance act altogether, as the first stage of a comprehensive policy dealing with the whole problem of tuberculosis in all sections of the population.

The ministry of health is making an important addition to its machinery for the prevention of disease by appointing a new staff of outdoor medical officers with general duties, clinical and administrative. The new posts will be held either on whole or on part time basis, but only the duties of the whole-time officers are as yet defined. The latter, stationed in their various areas, will act in a clinical capacity, either as referees or as consultants. They will examine insured persons referred to them either by the practitioners working under the national insurance act or by the approved societies; they will advise either or both of these on the

question of capacity for work, and they will assist the physicians in matters of diagnosis or treatment. In their administrative capacity they will examine health insurance medical certificates and records, and conduct inquiries arising on any points relative to the treatment of the insured. It is proposed to appoint in the first instance eighteen whole-time officers for England and three for Wales, and to create also a certain small number of supervisory posts.

Medical Inspection from the Cradle to the Grave

The board of education has issued consolidated regulations relating to the special services of elementary education for promoting the healthy physical and mental development of children. The most important provision is one securing a continuity of medical records from elementary to secondary schools. This great reform was suggested in Sir George Newman's recent report. It means that a child will now have a complete health record through all school life until it is about to enter on its future career. Indeed, it may be that the record will go back to birth or even to the period of the antenatal clinic, for medical care is now exercised at day nurseries and nursery schools. Industry will thus be provided with records of fitness, and it will be possible for business firms to prevent the weak or diseased being employed in work endangering life or threatening the safety of others. Moreover, a complete national health census will be secured and the localization and spread of disease, its complications and after-effects worked out. The new order is thus, though a small measure, an integral part of a movement for the state control of health of great magnitude. A new link has been forged in a chain that will stretch from cradle to grave, as the subjoined tabulation demonstrates:

Antenatal Clinic	Voluntary Agencies or Local Authorities
Day nurseries till 2 years	Day nurseries
Nursery schools, from 2 to 5 years	Board of education
Public elementary schools, from 5 to 14 years	Board of education
Secondary schools, from 14 to 18 years	Board of education
Employment	National health insurance (Ministry of Health) Board of Trade, Home Office, etc.

Rewards for Professional Research

In the *Times*, Sir Ronald Ross, one of the deputation which (as stated in a previous letter) brought the question of rewards for scientific discoveries before the government, returns to the subject. The proposal was that the state should expend a maximum sum of $100,000, a year for giving thirty or more moderate life pensions to men whose medical researches have been of accepted general value to the public without being remunerative to themselves. Owing to the number of the pensions and the small amounts of many of them, not only major discoveries but also much minor good work would receive recompense. At present, the Medical Research Committee dispenses subsidies for research, but that is a different matter. Mr. Balfour, who received the deputation, raised the difficulty that it was often hard to decide who had made the particular discovery. Sir Ronald Ross points out that such difficulties occur in the case of almost every kind of reward—when learned societies give medals, when the Royal Society elects new fellows, when the Nobel prizes are bestowed, and even when any state grants titles and honors. If the mere difficulty of selection is a bar to rewards, then scarcely any rewards at all can ever be bestowed. But in practice it is found that the difficulty can easily be overcome by keeping detailed registers of the work of all possible candidates, and by delegating the task of selection to competent committees. Even if an error is sometimes made—if a reward is given to the second best or third-best man—no great harm will be done, because in fact scientific discoveries are generally made by several persons, all of whom deserve the gratitude of the community.

Deaths

James Wright Markoe ⊕ New York City; College of Physicians and Surgeons in the city of New York, 1885; aged 58; a Fellow of the New York Academy of Medicine; consulting gynecologist to Vassar Brothers' Hospital, Poughkeepsie; consulting surgeon to the Neurological Institute and Caledonian Hospital, Brooklyn, and director and chief surgeon of the first division of the Lying-In Hospital of the City of New York; was shot and instantly killed, April 18, in St. George's Protestant Episcopal Church, New York City.

Arthur Frank Wilhelmy ⊕ Decatur, Ill.; Cincinnati College of Medicine and Surgery, 1896; aged 47; major, M. R. C., U. S. Army; a member of the attending staff of St. Mary's and Macon County hospitals; a member of the Decatur Board of Health; during the war with Spain captain, Illinois National Guard; while driving in his automobile over a grade crossing, April 16, was struck by an Illinois Central train and instantly killed.

James Thomas Searcy ⊕ Tuscaloosa, Ala.; University of the City of New York, 1867; aged 80; from 1892 to 1919 superintendent of the Alabama Bryce Insane Hospital; a Confederate veteran; president of the Medical Association of the State of Alabama in 1892 and 1893, and of the American Medico-Psychological Association in 1912-1913; died at the home of his daughter in Tuscaloosa, April 6.

George S. Dare, Rising Sun, Md.; Jefferson Medical College, 1866; aged 77; a member of the Medical and Chirurgical Faculty of Maryland; founder and for several years president of the Cecil County Medical Society; a director of the Union Hospital, Elkton; state director of the Baltimore Central Railroad; died, March 24.

Daniel F. Everts, Romulus, N. Y.; Long Island College Hospital, Brooklyn, 1876; aged 76; a member of the Medical Society of the State of New York, and president of the Seneca County Medical Society in 1882; a veteran of the Civil War; health officer of Romulus for several years; died, April 11, from pleuropneumonia.

Adlia C. Stanley, Tillar, Ark.; St. Louis College of Physicians and Surgeons, 1898; aged 67; a member of the Arkansas Medical Society; president of the Bank of Tillar, and formerly secretary and treasurer of the Good Bar Shoe Company, St. Louis; died in a hospital in Little Rock, March 25, from cerebral hemorrhage.

Frederick William McDonald ⊕ Wylam, Ala.; Birmingham (Ala.) Medical College, 1905; aged 40; once president of the Jefferson County Medical Association and a member of the medical staff of the Tennessee Coal, Iron and Railroad Company; died in an infirmary in Birmingham, April 6, from pneumonia.

George Egbert Fulton, Bluffton, Ind.; Miami Medical College, Cincinnati, 1878; aged 64; a member of the Indiana State Medical Association; a member of the state legislature in 1889 and 1891; local surgeon of the Toledo, St. Louis and Western Railroad; died, April 2, from pneumonia following influenza.

Daniel Arthur Chapman, Republic, Pa.; College of Physicians and Surgeons, Baltimore, 1907; aged 34; a member of the Missouri State Medical Association; a medical officer of the Second Missouri Infantry, with Mexican Border service in 1916; died in a hospital in Pittsburgh, April 5, from pneumonia.

Rozier Clageth Bayly ⊕ Alexandria, Va.; Georgetown University, Washington, D. C., 1905; aged 38; lieutenant, M. C., U. S. Army, and discharged, June 16, 1912; died in the Episcopal Eye, Ear, Nose and Throat Hospital, Washington, D. C., March 28, three days after an operation for mastoiditis.

Henry Brooks Baker, Ypsilanti, Mich.; Bellevue Hospital Medical College, 1866; aged 82; superintendent of vital statistics and secretary of the Michigan State Board of Health for nearly thirty-five years; once vice president of the American Social Science Association; died, about April 3.

Joseph Alexander Dambourges Jacques, Marlboro, Mass.; Montreal School of Medicine and Surgery, 1901; aged 43; for many years a member of the board of trustees of the Marlboro Public Library; died, April 4, from heart disease.

⊕ Indicates "Fellow" of the American Medical Association.

Joseph Simms, New York City; Eclectic Medical College of the City of New York, 1871; aged 86; a veteran of the Civil War; a member of the Anthropological Institute of Great Britain and Ireland; a specialist in physiognomy; died, April 11, from cerebral hemorrhage.

S. M. Mosely, Huntington, Ark. (license, state medical board, Arkansas, 1903); aged 54; mayor of Huntington; died in the Sparks Hospital, Fort Smith, Ark., March 29, from the effects of a gunshot wound of the abdomen, believed to have been accidentally inflicted.

Milton V. Cunningham, Youngstown, Ohio; College of Physicians and Surgeons, Chicago, 1894; aged 52; for two years city physician of Youngstown; a member of the staff of St. Elizabeth's Hospital; died at Santa Ana, Calif., March 24, from cerebral hemorrhage.

Justin Adfer Walling, Millbridge, Me.; Medical School of Maine, Brunswick and Portland, 1882; aged 51; a member of the Maine Medical Association, and president of the Washington County Medical Association; died recently.

Fred Charles Hunt, Girard, Ohio; University of Buffalo, 1897; aged 44; lieutenant, M. C., U. S. Army, and discharged, Jan. 11, 1919; died in St. Elizabeth's Hospital, Girard, March 20, as the result of middle ear disease.

Chauncey E. Koon, Grand Rapids, Mich.; Chicago Medical College, 1873; aged 76; visiting physician to Butterworth Hospital and a member of the staff of the Detention Hospital; a veteran of the Civil War; died, April 6.

Robert Lount, Hempstead, N. Y.; State University of Iowa, College of Homeopathic Medicine, Iowa City, 1881; aged 75; for twenty years health officer of Hempstead; died, April 5, from cerebral hemorrhage.

Robert Lee Long ✠ Atlanta, Texas; Memphis, Tenn., Hospital Medical College, 1902; aged 46; lieutenant, M. C., U. S. Army, and discharged, Dec. 21, 1918; was killed in a grade crossing accident, March 23.

Francis T. Overdorff, Johnstown, Pa. (license, Cambria County, Pa., 1885); a practitioner for forty-nine years; aged 79; a veteran of the Civil War; died in Johns Hopkins Hospital, Baltimore, April 5.

Benjamin F. Walker, Colerain, S. C.; Medical College of the State of South Carolina, Charleston, 1861; aged 87; for four years surgeon in the Confederate service during the Civil War; died, April 7.

John Peter Marshall ✠ Warren, Ohio; Jefferson Medical College, 1908; aged 37; a member of the American Academy of Ophthalmology and Oto-Laryngology; died, about April 5, from septicemia.

Harry Anderson Upshaw ✠ St. Louis; Marion-Sims College of Medicine, St. Louis, 1898; aged 42; lieutenant, M. R. C., U. S. Army; died in St. Anthony's Hospital, St. Louis, April 3.

George W. Seibert, Lebanon, Pa.; Jefferson Medical College, 1879; aged 65; for a time a member of the board of health of Lebanon; died in the Harrisburg Hospital, March 29.

Robert Sewell Johnston, Orange, Texas; Vanderbilt University, Nashville, Tenn., 1882; University of Nashville, Tenn., 1883; aged 57; died in San Antonio, about March 7.

Frederick Blecker Callin, Akron, Ohio; Ohio Medical University, Columbus, 1893; aged 63; who had been spending the winter in St. Augustine, Fla.; died suddenly, March 28.

John N. Thomas, Reed City, Mich.; Grand Rapids, Mich., Medical College, 1903; Hahnemann Medical College, Chicago, 1904; aged 37; died, March 29, after a surgical operation.

Herbert S. Hill, Springfield, Mo.; Rush Medical College, 1869; aged 76; a member of the Missouri State Medical Association; died in a hospital in Springfield, April 1.

James Mortimer Bodwell, Phenix, R. I.; Medical School of Maine, Brunswick and Portland, 1894; aged 51; a member of the Rhode Island Medical Society; died, March 25.

Eli L. Eberhard ✠ South Whitley, Ind.; Medical College of Ohio, Cincinnati, 1880; aged 62; local surgeon for the Nickel Plate and Vandalia systems; died, March 30.

John W. Nabersberg, St. Paul; Medical Department, University of Iowa, 1865; aged 91; a veteran of the Civil War; died, March 24, from hemorrhage of the bladder.

Charles Van Hook Ingle, Evansville, Ind.; University of Pennsylvania, Philadelphia, 1902; aged 41; died at the home of a relative at Los Angeles, recently.

Isaak Moskovich Zimmerman ✠ San Diego, Calif.; Imperial University, Warsaw, Poland, 1885; aged 56; died, March 15.

Goldsby King ✠ Selma, Ala.; Medical College of the State of South Carolina, Charleston, 1880; aged 63; died, April 5, from acute dilatation of the heart.

Edward Thayer Twitchell ✠ Ashmont, Boston; Harvard University Medical School, 1886; aged about 60; died, April 6, in Santa Barbara, Calif.

Samuel Lowry Wiggins ✠ McKeesport, Pa.; Jefferson Medical College, 1873; aged 71; surgeon to the McKeesport Hospital; died, April 3.

James Keirl Gilder, Newberry, S. C.; University of the City of New York, 1878; aged 64; died in the Columbia, S. C., Hospital, April 6.

William O. Hitchcock ✠ Dallas, Ga.; Southern Medical College, Atlanta, Ga., 1889; aged 57; died, March 31, from cerebral hemorrhage.

Hiram H. Shafer, Alliance, Ohio; Western Reserve University, Cleveland, 1882; aged 65; died, March 31; from cerebral hemorrhage.

John William Dodson, Rochester, N. Y.; University of the City of New York, 1888; aged 55; died, March 24, from cerebral hemorrhage.

George Pitkin Cooley, New Britain, Conn.; Homeopathic Medical College of Pennsylvania, Philadelphia, 1862; aged 91; died, April 2.

Winfield Kennedy Sharp, Pendleton, S. C.; Louisville, Ky., Medical College, 1874; aged 74; a Confederate veteran; died, March 18.

Thomas R. Carothers, Rock Hill, S. C.; Medical College of Virginia, Richmond, 1877; aged 65; died, March 31, from heart disease.

William A. Yeagy, Dillsburg, Pa.; Jefferson Medical College, 1890; aged about 57; died about April 3, from malignant disease.

Abraham B. Bradford, Belleview, Tenn.; Vanderbilt University, Nashville, Tenn., 1881; aged 67; died, April 4, from pneumonia.

Robert F. Wichterich ✠ Cape Girardeau, Mo.; Barnes Medical College, St. Louis, 1899; aged 52; died in his office, April 2.

Vallandingham Bodey, Dayton, Ohio; Starling Medical College, Columbus, Ohio, 1895; aged 56; died, about March 23.

Theodore Pachali, Reading, Pa. (license, Berks County, Pa., 1881); aged 74; a practitioner since 1865; died, March 26.

Elmer E. Gibble, Philadelphia; University of Pennsylvania, Philadelphia, 1893; aged 53; died, April 6, from pneumonia.

Frank Worthington Wilson, Muskegon, Mich.; University of Michigan, Ann Arbor, 1879; aged 65; died, March 21.

Royal Lee Hobbs, Reisterstown, Md.; Johns Hopkins University, Baltimore, 1918; aged 25; died, March 29.

Jeremiah A. Proctor, Union City, Ind.; St. Louis University, 1844; aged 90; died, April 7.

Marriages

LIEUT. ALBERT GOULD WENZELL, M. C., U. S. Navy, Washington, D. C., to Miss Emma Pettit of Harrisburg, Pa., on board U. S. S. *Mercy*, at Brooklyn Navy Yard, April 8.

THOMAS STEVEN CULLEN, Baltimore, to Miss Mary Bartlett Dixon of Baltimore and Easton, Md., at Princeton, Md., April 6.

WILLIAM AUGUSTUS DEAN, Tulsa, Okla., to Miss Fannie Belle Hamilton of Seneca, S. C., at Tulsa, April 3.

ALEXANDER F. ROBERTSON, Staunton, Va., to Miss Frances Sexton of Hazelhurst, Miss., March 26.

ALBERT VALE HUFFMAN, South Bend., Ind., to Miss Maude Tiner of Indianapolis, February 14.

OLIVER HAZARD PERRY PARRIGAN, Monticello, Ky., to Miss Mai Akers of Sonora, Ky., April 7.

LARCUS B. ALLEN to Miss Mary Vaughn Shealy, both of Alexander City, Ala., April 5.

MARSHALL BURR CATLETT to Miss Ethel Bercot, both of Fort Wayne, Ind., March 30.

DOUGLAS LAMAR HEAD, Concord, Ga., to Miss Adel Smith of Atlanta, Ga., March 25.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SOME ADULTERATED OR MISBRANDED MINERAL WATER

Harris Spring Water.[1]—The Harris Springs Water Co., Harris Springs, S. C., shipped some Harris Spring Water in January, 1917, from South Carolina to Georgia. Examination of this water by the Bureau of Chemistry disclosed *B. coli* in small quantities; the total number of organisms growing on agar at 37 C. exceeded 100 per c.c.; molds and liquefying organisms were also found. The government officials charged that the water was adulterated for the reason that it consisted in part of a filthy, decomposed, and putrid animal and vegetable substance. It was also declared misbranded as the quantity of the contents was not plainly and conspicuously marked on the outside of the package. In October, 1918, the company was found guilty and fined $25. —[*Notice of Judgment No. 6613; issued March 22, 1920.*]

Sprudel Concentrated Spring Water.—The West Baden Springs Co., West Baden, Ind., in August, 1917, shipped a quantity of "Sprudel Concentrated Spring Water," which was adulterated and misbranded. Examination by the Bureau of Chemistry showed that six out of eight bottles examined contained bacilli of the colon group and the product was declared adulterated because it contained "filthy and decomposed animal or vegetable substance." It was declared misbranded because the label stated that the water was "fortified with some of the natural products of the water" when as a matter of fact it contained added salts not obtained from the West Baden Springs. Furthermore, it was declared misbranded because it was falsely and fraudulently represented as a treatment for gout, rheumatism, diabetes and obesity "whereas in truth and in fact it was not." In November, 1918, the company pleaded guilty and was fined $100 and costs.—[*Notice of Judgment No. 6641; issued March 22, 1920.*]

American Apo'linaris Mineral Water.—The Standard Bottling and Extract Co., Boston, in the name of the American Apollinaris Co., shipped in December, 1915, a quantity of "American Apollinaris Mineral Water" which was adulterated and misbranded. It was adulterated in that a product other than Apollinaris Water had been substituted in whole or in part for Apollinaris Water. It was misbranded, first because the label falsely and misleadingly represented to purchasers that the article was Apollinaris Water when it was not, and further, because the quantity of the contents was not plainly and conspicuously stated on the outside of the package. In September, 1919, the company entered a plea of *nolo contendere* and was fined $25.—[*Notice of Judgment No. 6661; issued March 29, 1920.*]

Robinson Spring Water.[2]—The Robinson Springs Co., Pocahontas, Miss., shipped in July, 1917, a quantity of Robinson Spring Water. The government charged that this article was misbranded because certain therapeutic or curative claims made on or in the trade package were false and fraudulent and applied knowingly and in reckless and wanton disregard of their truth or falsity. The false and fraudulent statements were such as to lead the purchaser to believe that Robinson Spring Water was effective as a remedy for Bright's disease, diabetes, dropsy, cystitis, gout, rheumatism, indigestion, kidney and bladder troubles when in truth and in fact it was not. One C. L. Bradley appeared in the suit claiming the water as his property and denying that the therapeutic claims were false and fraudulent. Bradley averred that many reputable physicians had testified to the therapeutic value of this water in the treatment of the diseases for which he recommended it. Judge Jack in delivering his charge to the jury emphasized the fact that the government was not attacking the water as bad or unfit for use but was attacking the therapeutic claims made for it. In his charge Judge Jack had the following pertinent comments to make on the Food and Drugs Act:

> "The Pure Food and Drugs Act is one of the best laws of its character placed on the statute books in many years. It simply means that a man shall correctly brand or label that which he ships in interstate commerce, that the purchaser must be informed of the character of the article bought, and must not be deceived as to its curative properties, in other words, that the drug must not be sold under false representations.
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> "Barnum, the veteran showman, used to say that the American people like to be humbugged. That is, perhaps, more or less true. Consequently, a man who deliberately bets his money on a shell game, or who invests his savings in a gold brick, receives, and is entitled to, little sympathy. There is, however, a class of people, not ordinarily over credulous or gullible in ordinary matters of business, who, when stricken with a fatal malady, like drowning men, grasp at straws, and fall easy victims to quack doctors and patent medicine fakers. Such a man, when told by his physician that his case is hopeless and his days numbered, against his own better judgment, tries one nostrum after another in the desperate hope that he may find a cure. Such a man is the more easily persuaded to buy an alleged remedy whose efficacy he may doubt if he knows that it is at least perfectly harmless. These remarks are made to impress on your minds the wisdom of the law and the importance of its strict enforcement.
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> "If the water in question has the qualities attributed to it by the owner, it is not only his right to so advertise it but is to the interest of the public that he should do so. On the other hand, if the water has not the qualities ascribed to it, then such false advertising by labels on the bottles should be suppressed, and the deception of the public should be stopped."

The jury returned a verdict for the government and on Feb. 25, 1919, a decree of condemnation and forfeiture was entered.—[*Notice of Judgment No. 6623; issued March 22, 1920.*]

Ferro-Manganese Regent Spring.—The Excelsior Springs Mineral Water and Bottling Co., Excelsior Springs, Mo., shipped in May, 1917, a quantity of "Ferro-Manganese Regent Spring." The product was declared misbranded because it was falsely and fraudulently represented "as a remedy for alcoholism, chronic rheumatism, dyspepsia, diabetes, Brighst's disease, albuminuria, dropsy, sciatica and insomnia, when, in truth and in fact it was not." Furthermore, the quantity of the contents was not plainly and conspicuously marked while the label was so worded as to deceive and mislead purchasers into the belief that it was a natural mineral spring water when in fact it was an artificial carbonated water. In December, 1918, the company pleaded guilty and was fined $15 and costs.—[*Notice of Judgment No. 6665; issued March 29, 1920.*]

1. This is the second case of misbranding of Harris Spring Water; the other case is described in Notice of Judgment No. 4441.

2. This is the fourth case of misbranding of Robinson Spring Water; the other cases are described in Notices of Judgment Nos. 4072, 4073 and 6467.

Indoor Life and Tuberculosis.—There is every reason to assume that the habitual inhalation of air vitiated by dust, the products of respiration, combustion and decomposition, and by the possible presence of toxic fumes and gases, plays an important rôle in the causation of respiratory diseases. All the injurious effects are intensified when human beings are obliged to occupy rooms with an air supply insufficient for the proper oxygenation of the blood, and also when, because of inadequate floor space, contact infections are more frequent. As a result of these adverse conditions we note an undue prevalence of consumption, pneumonia and septic sore throat in crowded workshops, dwellings, prisons and, formerly, also in military barracks and on battleships.—G. M. Kober, *Pub. Health Rep.*, March 26, 1920.

Correspondence

EXPERIMENTAL WORK ON CAUSATION OF LETHARGIC ENCEPHALITIS

To the Editor:—In THE JOURNAL, March 27, Dr. Simon Flexner published a comprehensive article on encephalitis lethargica. On page 868 he refers to the experimental work which my associates, Drs. Loewe and Hirshfeld, and myself have done on the etiology of the disease in transmitting it to rabbits and monkeys. In this reference he states that "Apparently they did not succeed in infecting those animals by inoculating the affected nerve tissues themselves." This is an error in statement, probably due to an oversight on the part of Dr. Flexner.

In the *New York Medical Journal,* May 3, 1919, we described the successful inoculation of a *Macacus rhesus* monkey with an emulsion of brain from an encephalitis patient. An emulsion of the brain of this animal was injected intracerebrally into another *Macacus,* and we reported that this animal developed a hemiparesis six days after the inoculation. Despite the period intervening between the inoculation and the development of symptoms, the paralysis was thought to have been due to hemorrhage following the injection, and we reported "lesion possibly traumatic." Subsequent study of this brain revealed that, in addition to the hemorrhage and necrosis, the typical vascular lesions of encephalitis were found, and we reported this observation in the *Journal of Infectious Diseases,* November, 1919. In the same article we also reported the successful inoculation of a rabbit with a filtrate of the other hemisphere of the same brain, which had been preserved in 50 per cent. glycerin for two months. We therefore feel that we have succeeded in infecting animals by inoculating the affected nerve tissues.

ISRAEL STRAUSS, M.D., New York.

"THE CAUSE OF ABSCESS OF THE LUNG AFTER TONSILLECTOMY"

To the Editor:—Dr. Clendening, in his article in THE JOURNAL, April 3, 1920, protests against the use of the motor-driven ether apparatus. He says: "These ingenious little mechanisms force ether into the posterior pharynx, under what is really a very high [sic] pressure." The instruments which I have used daily for years—the Yankauer and the Beck-Mueller instruments—produce *no pressure* in the posterior pharynx, as can be demonstrated by holding a piece of lint in the back of the throat. The ether enters the mouth through a curved cannula and is thrown against the buccal wall external to the molar teeth, and from there the current is thrown more upward than toward the posterior pharyngeal wall and the glottis. It sounds like a joke to hear one say that "the pressure balloons out the posterior pharyngeal space" and that it "impedes coughing." None of these things have ever occurred with the machines with which I am familiar. This apparatus enables the anesthetist to maintain a constant anesthesia, and thus aids materially the operator to do his work in a surgical manner. In the presuction and motor-driven-ether days a tonsillectomy was the dirtiest piece of surgery imaginable. Now it is a respectable procedure. The patients never vomit and they inhale less blood, less pus and less vomitus.

His second conclusion—that there is a "direct relation between the tonsil and the lung"—seems unwarranted. The Doctor's argument for a direct infecting channel from the tonsil to the apex of the lung does not seem at all convincing. The lung is enclosed in a serous sac, one portion of which covers the lung and the other the parietal wall, and there is no possible way of having a direct infection without having a previous inflammation and adhesion of the walls of the pleura. One would conclude from the Doctor's inference that there is an unknown open lymphatic sewer drain direct from the tonsil to the apex of the lung. The case he cites to prove his contention certainly does not prove anything except that the whole bronchial tree is more or less of a reservoir for the infectious material which drops down from the mouth, the sinuses and the tonsils.

The relief of such cases as he referred to, i. e., a troublesome bronchitis relieved after removing infected tonsils, has been the experience of thousands of men. This knowledge is so common that many of the laity come to the specialist and ask to have the nose, tonsils and sinuses examined for a focus of infection. In a series of more than a thousand consecutive tonsillectomies done under local anesthesia by myself and immediate colleagues, there has not been a single instance in which so much as a bronchitis developed after the operations. It would seem, then, if such a serious infection was so frequent, and their path of infection such a straight channel, that certainly one out of a thousand of our cases might have shown some kind of infection.

As to the matter of stopping hemorrhage, we are scolded as maudlers. If the Doctor knows of a *noli tangere* method of stopping a hemorrhage, please let us have it. It is a very simple matter to sew up a tonsillar cavity, and by properly placing one's sutures, a sufficient pressure can be brought to bear to control almost all postoperative hemorrhage. I have never seen a case of bronchitis nor lung abscess from sewing up a tonsil cavity. I, too, agree that unnecessary probing or sponging in the cavity is detrimental. He mentions one of Dr. Richardson's cases of lung abscess following the sewing up of a tonsil, and attributes the abscess to that operation. Did not Dr. Richardson give ether to stop his hemorrhage, and could not the abscess be attributed to either the ether or the insufflation of infected mucus and blood?

If the Doctor expects to "retain the confidence of the rest of the profession" he will have to give us more evidence of his "direct path from the tonsils to the lung," and he will have to *show* some of us men who have used the invaluable so-called pressure anesthesia apparatus for years without any evidence whatever of harm that it is really harmful.

OSCAR WILKINSON, M.D., Washington, D. C.

To the Editor:—An interesting article entitled "The Cause of Abscess of the Lung After Tonsillectomy" by Logan Clendening, M.D., appeared in THE JOURNAL, April 3. The argument is: Lung abscesses have occurred rather frequently of late years; motor apparatus for anesthesia has been used rather frequently of late years; therefore lung abscesses are caused by motor apparatus. Therefore motor apparatus are to be discontinued until we find that they are not to blame, on which finding they may presumably be used again. The author has nothing to say of the rather important question of measured pressure, of ether concentration, or of the precise point of delivery of the vapor. I have assisted at many hundred tonsillectomies done by insufflation anesthesia and have never witnessed "ballooning of the posterior space." Nor have I ever seen pressure per se impede coughing. The refutation of this absurd notion is thrust on one only too often in the presence of a reduction in the concentration of the anesthetic vapor.

One is impelled to ask: Wherein lies the peculiar viciousness of a motor apparatus, as compared with its predecessor, the foot bellows? Is it because it is electrical, complicated, rather more difficult to manage, and more expensive to buy and maintain? To insist on the discontinuance of motor apparatus implies the cessation of insufflation anesthesia. Inhalation methods alone remain. Ether by inhalation will

not maintain anesthesia in adults suffering tonsillectomies. More powerful agents must be employed. We are familiar with chloroform maintenance. We know its advantages and its dangers. Some of our best operators prefer this method in expert hands. As a routine, chloroform has been used with decreasing frequency. It is being replaced by ether insufflation.

I know of no better way to protect the patient against the possibility of lung abscess than a strict adherence to the correct details of a properly conducted insufflation method. These details are essentially as follows: The delivery of the vapor must be made intranasally through catheters which terminate below the base of the tongue, behind and below the tonsils and any subsequent hemorrhage. By this means, blood, saliva, and portions of tonsil are blown into the mouth away from the larynx. The volume of air delivered should be sufficient for the respiratory needs, from 15 to 20 liters a minute. The pressure should not exceed 30 mm. of mercury. The concentration of ether should remain between 60 and 70 mm. vapor tension.

The latter part of the article will give the nose and throat surgeon food for thought. It appears that there are cases of lung abscess in which motor apparatus have not been used. The familiar relationship between tonsil and lung must therefore account for this. The surgeon is told not to dabble in the denuded area (presumably the tonsillar fossa). He is also consoled with the thought that there is "no good reason for getting out every particle of tonsillar tissue," this being quite impossible unless done "at the first step of the operation."

Paluel J. Flagg, M.D., New York.

"PRONUNCIATION OF DUODENUM"

To the Editor:—The inquiry of a librarian (The Journal, April 10, 1920, p. 1040) as to how to pronounce a simple word like "duodenum," which can be found in any dictionary—and by any dictionary I do not mean a medical dictionary, but one by professional lexicographers and philologists—emboldens me to ask the question I have long had in mind: Why not a dictionary by the American Medical Association? Perhaps the librarian had looked in the regular dictionaries, and the physicians whom she heard using the word had never looked.

There are about half a dozen medical dictionaries on the market now, all covering the same field approximately, and there is little choice among them, although each publisher claims an advantage for his. In these days of efficiency and scarcity of paper, one dictionary ought to be enough for the medical profession in this country. Few of the existing dictionaries are bold enough to indicate clearly the quality of vowels, being content for the most part to point out the stressed syllables. The derivations of the words are variously given. Rarely a definition is poorly given or misleading. In one instance I recall having seen a technical word misspelled and correctly spelled in the same dictionary, and correctly defined in each place.

The ideal medical dictionary would be one edited by a board of lexicographers and philologists. The definitions would be originally supplied by specialists in various medical branches. The pronunciations would be clearly indicated by the use of all the diacritical marks and characters employed by regular dictionaries of the English language. The derivations of the words would be clearly explained, and when from the Greek the original type would be employed. If one is intelligent enough to appreciate Greek in Latin characters he would surely appreciate it in the original type. Unusual terms would have a reference to the original use.

A philologist's choice should be indicated in such words as anemia, anaemia; leucemia, leucaemia; leukemia, leukaemia; poik-, poek-, pek-, poic-, poec-, pecillocyte, spirochaeta, spirochaita, spirocheta. As well ask a lexicographer to diagnose a neoplasm under the microscope as to let the average medical man settle such spellings.

The abstractors of Current Medical Literature for The Journal, and the compilers of the splendid *Quarterly Cumulative Index* published by The Journal, are in excellent position to find all the new words used in medicine. Once such a dictionary has gotten under way, a yearly supplement could be furnished to each subscriber. In a five year period a new edition could be put out. "Why not?"

M. W. Lyon, Jr., M.D., South Bend, Ind.

TITLES TO HIDE THE IDENTITY OF DRUGS

To the Editor:—At its next meeting, the U. S. Pharmacopeial Convention should consider the giving of technical names to those drugs the names of which are practically the same in English and in Latin, for the reason that the physician often wants to prescribe these drugs and does not want his patient to know what he is ordering. Such drugs include quinin, morphin, codein, cocain, strychnin, and there may be others that I do not at this moment recall. In this city "pulv. cinchonae fortior" is ordered when quinin is wanted. Outside of this city no one would know what was desired. I order erythroxylinae when I want cocain; some druggists do not know what I want. As we have acetylsalicylic acid for aspirin, or acetphenetidin when phenacetin is wanted, so we should have technical names for the other drugs. I hope to be present at the convention for the revision, when it meets here. I hope it will give this matter careful consideration.

C. R. Dufour, Phar.D., M.D., Washington, D. C.

[Comment.—We question the need for Pharmacopeial titles for salts of quinin, morphin and cocain especially designed to hide the identity of these drugs from the patient. Patients who are sufficiently intelligent to recognize terms such as cocainae hydrochloridum, morphinae sulphas or quininae sulphas may be trusted to know the identity of the drugs which they are taking—particularly since the Harrison Narcotic Law safeguards the use of narcotic drugs.—Ed.]

THE OLD QUESTION: THE DISCOVERER OF ANESTHESIA

To the Editor:—In The Journal, April 10, 1920, Dr. S. Adolphus Knopf directs attention to the discovery of ether as an anesthetic agent by Dr. William T. G. Morton, and expresses the hope that a statue of that distinguished physician may be placed in the Hall of Fame.

While it is generally accepted that Dr. Morton made an independent discovery of ether as an anesthetic, and applied it practically at the Massachusetts General Hospital, Oct. 16, 1846, it is likewise believed that sulphuric ether was employed as an anesthetic by Dr. Crawford W. Long as early as March 30, 1842. On that occasion Dr. Long removed a growth from the neck of a Mr. James Venable, the original bill for that service being still in existence.

It would appear, then, that Dr. Long applied ether in practical use more than four years before Dr. Morton called attention to its anesthetic properties. Unfortunately, Dr. Long delayed in announcing his discovery, and to him no credit can be given for acquainting the world at large with this great blessing. But ample proof has been produced to show that the Georgia physician was the first to discover ether anesthesia, so that further argument on the subject would seem unnecessary. S. J. Lewis, M.D., Augusta, Ga.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TNBERCULOSIS AMONG ESKIMOS—TREATMENT OF LEUKOPLAKIA

To the Editor:—1. Please give me reference or information relative to the frequency of tuberculosis among the Eskimos. 2. What can you say of the treatment of leukoplakia?

A. E. HUBBARD, M.D., Peoria, Ill.

ANSWER.—1. Franz Boas (Ann. Rep. Bureau Am. Ethnol. **6**, 1884-1885) and E. W. Hawkes (Canada, Geol. Survey, Mem. 91, 1916) comment on the prevalence of infectious respiratory diseases among the Eskimos of Alaska and Labrador. Dr. Grenfell (Labrador, the Country and the People, New York, Macmillan Company, 1910) writes: "Consumption is the main enemy of these people who live here in one of the purest atmospheres in the world" (p. 178). "The worst enemy of the Eskimo is, again, tuberculosis, and from that in one form or another most of the people die" (p. 179). "During fifteen years of medical mission work on the coast of North Newfoundland and Labrador, I have discovered that one out of every three or four deaths on the coast is due to tuberculosis" (pp. 256-257).

2. It is impossible to outline adequately the treatment for leukoplakia in a patient one has not seen. In general, it is recommended that the teeth be examined and cared for by a competent dentist; that abstinence from tobacco and similar irritants be enforced; that complicating conditions, such as syphilis, receive appropriate attention. In the early stages of the disease, mild astringents and alkaline mouth washes are employed. In long standing and advanced cases, caustics, such as 20 per cent. chromic acid; freezing with carbon dioxid snow, roentgen ray and radium are utilized. The condition is one best treated by a competent dermatologist.

ORGANIZATION AND CONDUCT OF HOSPITAL FOR DIAGNOSTIC PURPOSES

To the Editor:—Can you tell me if there is a publication which gives, in outline, how to organize, finance and conduct a small hospital for diagnostic purposes? Kindly advise me as to where such information could be secured.

RALPH GETELMAN, M.D., Philadelphia.

ANSWER.—A brief article describing an institution especially designed for this purpose appears under Medical Education, Registration and Hospital Service, in the adjoining column. See also:

Birtch, F. W.: A "Group Study" Plan for a Diagnostic Team Acting as a Laboratory for the Profession, THE JOURNAL, May 27, 1916, p. 1672.
Behlow, W. W.: Group Study, THE JOURNAL, Feb. 3, 1917, p. 360.
O'Neill, B. J., and Pollock, R.: Analysis of First Two Hundred Cases Studied at San Diego Diagnostic Group Clinic, *California State J. Med.*, Butler Building, San Francisco **16**: 428 (Sept.) 1918.
Knapp, H. B.: Cooperation Among Doctors, THE JOURNAL, May 16, 1914, p. 1578.
Lewis, F. P.: Group Study, a Necessity in Ophthalmic Research, THE JOURNAL, Nov. 22, 1919, p. 1617; June 28, 1919, p. 1893.
Gutmann, J. H.: Cooperation in Medicine, *Albany M. Ann.*, Albany Medical College, Albany, N. Y., October, 1912.
Cabot, R. C.: Better Doctoring for Less Money, *Am. Magazine*, April, 1916, p. 7.
Axtell: Team Work in Medicine, *J. Kansas M. Soc.*, 303 Commerce Building, Topeka, Kan., September, 1916.
Medical Partnerships—So-Called Group Plan, *Bull. M. & Chir. Fac. Maryland*, 1211 Cathedral Street, Baltimore, June, 1916.
Blain, A. W.: Development of Private Pay Clinic, *J. Michigan M. Soc.* 91 Monroe Avenue, Grand Rapids, Mich. **17**: 354 (Sept.) 1918.
Davis and Warner: Dispensaries and Their Management and Development, New York, the Macmillan Company.

PRIVILEGES ACCORDED PHYSICIANS DRIVING AUTOMOBILES

Information is desired as to what towns or counties have passed ordinances, police regulations, etc., giving special privileges to physicians driving automobiles. It is desired to know how these privileges were granted—by city ordinance or by police regulations—and specifically what the privileges are. Address THE JOURNAL.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.
GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.
HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.
ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
LOUISIANA: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.
MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.
NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, May 19-26. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.
NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.
NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.
TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.
WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

A CLINIC BUILDING FOR THE PRACTICE OF GROUP MEDICINE

E. L. MYERS, M.D., N. M. WHITEHILL, M.D., AND B. T. WHITAKER, M.D.

BOONE, IOWA

This clinic building has been designed and built for the use of three physicians in order to secure the advantages of economy and efficiency that come with the grouping of several practices in a single plant. The building is a face brick and Bedford stone structure, 40 by 72 feet, one story, although built on a foundation sufficient to carry two or more stories. It stands on a prominent corner lot 40 by 100 feet, 28 feet of which is used for a garage for three cars. The building, including the garage, is heated from the central heating plant of the city. An open court at the rear is used for ambulance emergency cases, as it is easily accessible to the roentgen-ray department. Intercommunicating telephone and signal call light systems are used.

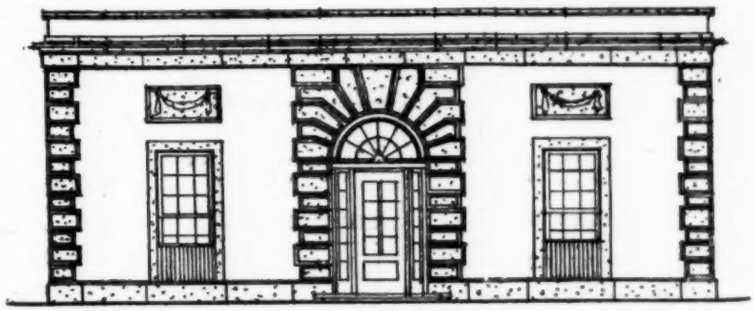

Fig. 1.—Front elevation of clinic building for practice of group medicine.

The general arrangement is fairly well described by the accompanying illustration of the floor plan. The reception room, 15 by 24 feet, opens just off the front vestibule, and on the opposite side is the library, which at times is used for the overflow from the reception room. The corridor leading from the reception room to the offices of the three physicians has a floor covered with carpet. The vestibule floor is of hand made flemish tile. Each physician has a private suite of two rooms, fitted to suit his peculiar needs, consisting of a consulting room and a treatment, examination or operating room. The latter is finished in white enamel,

having tile floors and hospital metal furniture. The interior is finished in Circassian walnut, except the work rooms and laboratories, which are enameled. A rest room is provided for women, children and those who have to wait long for treatments, roentgen-ray or laboratory tests, etc. The laboratory is completely furnished for chemical, bacteriologic and microscopic work, and is in charge of an expert technician. In the roentgen-ray department the latest equipment, both for treatment and diagnosis, has been installed. The transformer room and developing room are lined with lead. Complete physical therapy equipment has been installed for the treatment

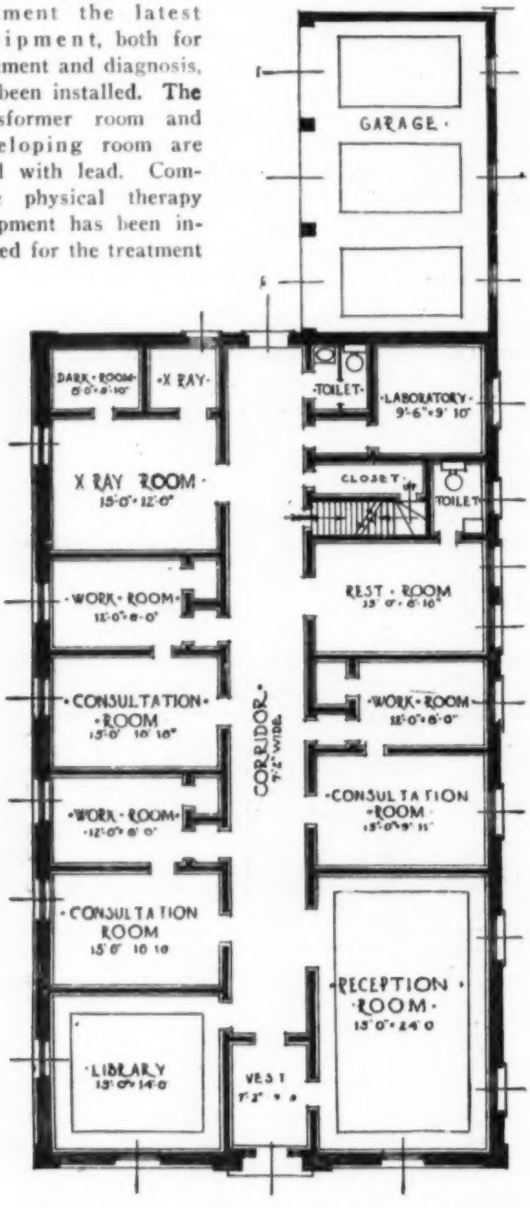

Fig. 2.—First floor plan, 40 by 72 feet, including garage.

of skin diseases, joint and muscular conditions, tuberculosis, neurasthenia, etc. The building was erected in 1919 at a cost of $25,000, including interior light fixtures, decorating, heating, plumbing and electric wiring.

The medical and surgical work will be handled as specialties, and as the work increases, plans will be carried out for enlarging the building by extending the first floor or adding a second story. The business of the organization is carried on through the main office by a salaried manager. The building and equipment are owned and controlled by a corporation, while the business is carried on as a partnership, the running expenses being paid out of a common fund and the members of the partnership sharing in the net income.

The results so far have more than justified this radical move from the generally accepted methods of practice; and if the proper organization can be effected, with men selected for their peculiar fitness, with energy, enthusiasm and consideration for all members of the organization, and free from dissensions and jealousies, the plan is bound to grow as it means better service and greater efficiency. If our short experience is any criterion, we are very optimistic regarding the future of this plan.

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Washington University		(1910)	83.3
University of Buffalo		(1918)	81.6, 83.4
Jefferson Medical College		(1900)	98.9, (1909) 90.2
Vanderbilt University		(1917)	76
University of Virginia		(1895)	88.5
	FAILED		
University of Louisville		(1893)	83.1
Baltimore Medical College		(1904)	81.4
American Medical College		(1892)	71.6
Eclectic Medical University, Kansas City		(1918)	54.9
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Tokyo Charity Hospital Special Medical School		(1915)	68

Social Medicine and Medical Economics

THE HEALTH PROBLEMS OF A SMALL CITY

C. H. MAYO, M.D.
ROCHESTER, MINN.

Serving the community as health officer has long, but mistakenly, been looked on as a lowly and trouble-making occupation. When the constitution of the United States was written, general public health problems were not recognized. In order to make the constitution acceptable to a people who had left Europe because of a desire for freedom, the personal liberty and privilege of the individual was made as unrestricted as possible. As the states developed, health problems increased but, from lack of knowledge of both conditions and methods, were relatively few until a recent period. The city charter was usually drawn for the appointment of a health officer by the council at a salary of $150 a year. The health work was seldom well looked after, as the position was usually a political one, the appointee being too busy or not adapted to the work. The average salary of state health officials is only $4,000 or $5,000 a year, inadequate to be sure, but the fault has been with the profession. The city attorney was more important and better paid.

For several weeks in 1908, Rochester suffered from a continued epidemic of scarlet fever. I called a public meeting to discuss the problem and pointed out that the city was getting a bad name for its failure to control contagious disease, and that farmers feared to come to town to trade; this appealed to the business men. The council chamber was stormed, and the health officer resigned; I was asked to accept the position the same evening, and accepted the appointment. The council granted $2,000 a year for an expense account; there was also several hundred dollars a year income from fees. I appointed a deputy health officer, half time, at $1,500 a year, and an assistant inspector, half time, at $50 a month, also a clerk at $50 a month; and I donated the office, light and heat.

I was later elected to the city school board, a most harmonious and progressive group of individuals, its president a woman. Since then we have sold and rebuilt all but one of the city schools, and have built a high school covering a city block, as well as six fire-proof buildings, housing in all more than 2,000 children. In the high school commercial courses are given, as well as manual and vocational training; there are classes in cooking, dressmaking and housekeeping for the girls. Here also we have a great swimming tank with a gymnasium for the girls and one for the boys, with a physical director for each group; an attractive and instructive moving picture exhibit is given usually twice a week. There is a large school band and orchestra. Military training and drill have been given for the last three years (not compulsory), with most of the older boys in uniform. Here we give the first two years of the regular university course under state supervision at one seventh of the expense at which it can be obtained by nonresidents at the state university. This results in about four times as many of our students securing advanced education as those in other places, and these boys and girls are more mature when they leave home to complete the course at the university amid city surroundings. We have a school nurse who keeps watchful care of absentees. If there is sickness among the children of the poor, the health officer is notified either by the school nurse or the city nurse, the latter being supported by the civic league. The state conducts a school for the care and education of backward children at a cost to the state of several hundred dollars a year for each child; it will allow $100 a year for each child for the education of these children in their home city. Few such children receive any education, as their parents keep them at home. The local school board, on investigation, gathered in sixty-six such children, and bought an automobile for the school nurse, who calls for several of these children who could not otherwise attend school. We conduct four such so-called "opportunity rooms" with practically no expense to the city. We are now developing a baby clinic and child welfare clinic with a special nurse and rotating medical service, all under the supervision of the health office. It is hoped that this will give the health officer a full and continuous record of all the children in the city.

It may be asked, Why speak of this school work? From the health office standpoint our greatest trouble in the control of disease comes from the great mass of un-Americans who resist health control of contagious disease as an affront to their personal liberty. This is also true of those who are naturalized, and we have 14,000,000 unnaturalized foreign population, of whom 7,000,000 cannot speak English. By this practical instruction of the children in health work, and by following up the instruction, we secure results which will make these children demand public health protection in the future for their children, as their right while receiving education. In the fall, when school opens, the health officer secures, on request, the services of several physicians of the city, and a complete record is made of each child's general condition on entering school; this examination is of appearance, weight, eyes, ears, throat and physical condition. All previous diseases are recorded on the card, and each year it is added to as the physical health record during school life. The city dentists donate their services, and have established a dental clinic at the high school. All poor children receive free treatment for throat troubles, and free glass fitting.

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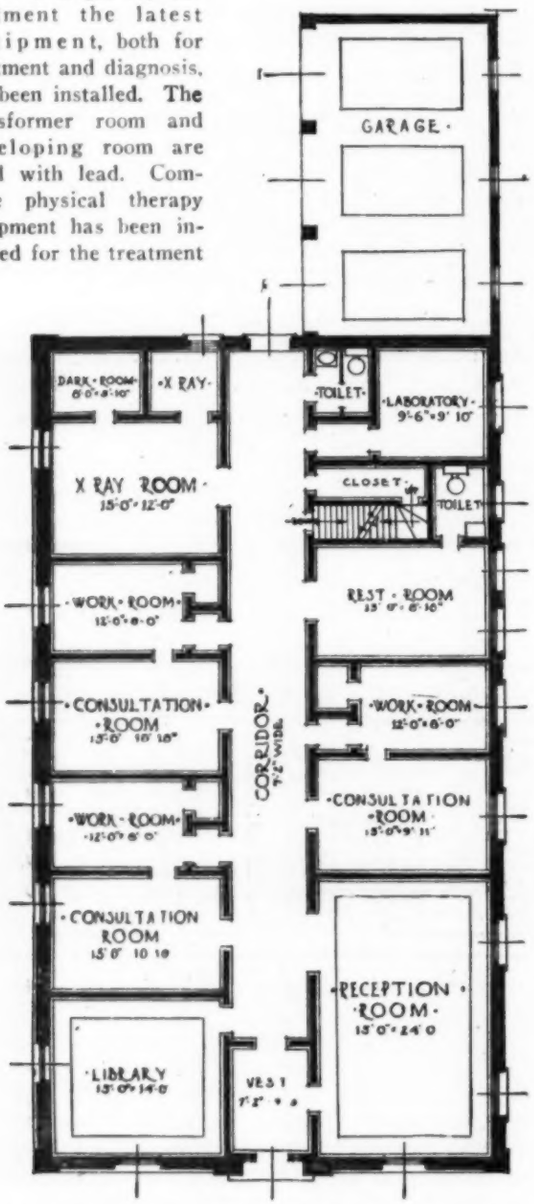

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Book Notices

THE DISEASES OF INFANTS AND CHILDREN. By J. P. Crozer Griffith, M.D., Ph.D., Professor of Pediatrics in the University of Pennsylvania. Two volumes. Cloth. Price, $16 net. Philadelphia: W. B. Saunders Company, 1919.

The author has presented a review of the diseases of infants and children that is well-nigh encyclopedic. He has consulted a vast amount of medical literature, periodicals and textbooks, and discusses the whole subject in a systematic manner.

He first describes the development of the fetus, and then considers the hygiene of infancy, devoting considerable space to amusements, training, sleep, exercise and other factors in infant disturbances—simple factors that are too often overlooked in the search for obscure causes. The section on sleep is interesting, although the author seems to have overlooked a recent analysis by Strauch which has special reference to psychic factors. The section on breast-feeding is complete, and presents many practical suggestions. In discussing artificial feeding in the first year, Griffith points out the essential features of the two methods known as percentage feeding and the caloric method. He shows that the caloric method is, in the nature of things, an impossibility, without a knowledge of the percentage composition of the milk mixture. In his description of calculations for preparation of correct milk mixtures, the author again presents the card first published in THE JOURNAL in 1918, which is an excellent ready reference for easy calculation.

The fifth chapter concerns foods other than milk, and the sixth, proprietary and special named mixtures. "The proprietary foods," the author says, "are unreliable and unnecessary: unreliable, because they are never the perfect substitute for mothers' milk, in spite of the claims of the manufacturers; unnecessary, because it is rare that they cannot be entirely dispensed with." Diet after the first year and diet in sickness are considered, after which the author takes up the characteristic diseases in infancy and in childhood. In the latter section he gives an excellent outline as to the methods of examination and diagnosis, the significance of individual symptoms, a brief discussion of infant mortality, and a general discussion of therapeutics as especially applied in infancy. This concludes the first division of the book.

The second division takes up the diseases of infancy and is divided into twelve sections, in which are discussed diseases of the various body systems—circulatory, respiratory, etc. In this discussion the author shows familiarity with current American and foreign periodical literature and gives due credit for phrases or facts which are borrowed. The treatment recommended is usually rational and simple. The author makes no mention under either measles or scarlet fever of attempts at the use of convalescent serum, although this subjcet has received considerable attention in recent literature. In the treatment of whooping cough, he is not convinced that vaccines have any value, but believes their use, both as prophylactic and curative is relatively harmless, and may be tried experimentally. In his discussion of the etiology of mumps, he gives many references to foreign literature, but has overlooked some important American investigations: Tunnicliff et al.

In the discussion of poliomyelitis, the after-treatment of the paralyses seems somewhat meager. The extensive studies of Lovett and others of the Boston school deserve mention. Infantile scurvy receives notable attention, but in this case, references to much work done since 1914 are missing and constitute a serious oversight. In this part of the book, pages 610 and 611, several typographic errors are noted. A special chapter is devoted to the diatheses. The author points out that the old view as to the diatheses was succeeded by a tendency to believe that such peculiar systematic reactions do not exist, but that recently it has been found that the diatheses do, in fact, exist. He classifies the diatheses as a "constitutional peculiarity which acts as a predisposition." Special attention is given to the spasmophilic, lymphatic, neuropathic and exudative types. In the discussion of digestive disturbances, there are colored plates of the types of infant stools, which are instructive.

These volumes will be found especially helpful by the general practitioner who is confronted with children's practice. A well-arranged and fully detailed index to each volume and a general index will enable him to turn quickly to practical discussions of many difficult problems. The books are well printed and beautifully illustrated. There are more than 400 excellent half-tones and twenty fine colored plates.

A PRACTICAL TREATISE ON OPHTHALMOLOGY. By L. Webster Fox, M.D., LL.D., Professor of Ophthalmology, Medico-Chirurgical College Graduate School. Cloth. Price, $8. Pp. 831 with 306 illustrations. New York: D. Appleton and Company, 1920.

In the new edition of his admirable treatise the author has not only eliminated all ambiguous expressions that may have accidentally appeared in his former work, but also, by incorporating new symptoms, new points of diagnosis and new methods of treatment, has brought it strictly up to date. An especially noteworthy feature of the book is an appendix containing surgical operations, observations on military ophthalmology, and a very large formulary. To all who recognize Dr. Fox's skill as an operator, the technic of his own operation for the relief of conical cornea is of special interest. The operation of excision of the tarsal cartilage in trachoma, which has been ignored in most textbooks, is fully described. The chapters dealing with the various ocular manifestations in constitutional and nervous diseases, subjects passed over very superficially in many textbooks, are discussed in detail. The profusion of illustrations, the happy selection of subjects for the colored plates, and the general typographic excellence of the book will undoubtedly assure the author of a most hearty reception by his professional colleagues.

ARITHMETIC OF PHARMACY. By A. B. Stevens, Ph.D., Ph.C., College of Pharmacy, University of Michigan. Fourth edition. Cloth. Price, $1.50 net. Pp. 100. New York: D. Van Nostrand Company, 1920.

This practical little book well covers the field expressed by its title. The mathematics of pharmacy is complicated by the necessity of changing from metric to apothecaries' measure and vice versa; by the fact that there are three kinds of thermometers used for measuring heat, and by the custom of writing formulas for solutions by percentages of the various ingredients. The methods and figures given in Stevens' book will save considerable time for those finding such calculations necessary. Each department is followed by suggestive problems, and their solution will be a valuable exercise for pharmaceutic and medical students, as well as for physicians.

COMMON DISEASES OF THE SKIN WITH NOTES ON DIAGNOSIS AND TREATMENT. By G. Gordon Campbell, B.Sc., M.D., C.M., Lecturer on Dermatology and Pediatrics, McGill University. Cloth. Price, $4. Pp. 229, with illustrations. New York, the Macmillan Company, 1920.

This gives in alphabetical order the commoner diseases of the skin. Fully half the book is taken up with halftones made from photographs which are reasonably good. The text contains nothing but a very short description of the symptoms and a similarly short outline of treatment. With the greatest desire to be indulgent to it, no reason can be found by the reviewer for the publication of such a book, in the face of the existence of a number of really excellent elementary books on skin diseases.

MODERN SURGERY: GENERAL AND OPERATIVE. By John Chalmers DaCosta, M.D., LL.D., F.A.C.S., Samuel D. Gross Professor of Surgery, Jefferson Medical College, Philadelphia. Eighth edition. Cloth. Price, $8 net. Pp. 1697, with 1177 illustrations. Philadelphia: W. B. Saunders Company, 1919.

This book—a standard work which has made itself a place in American surgery—is now in its eighth edition. The author indicates that the book does not include all of the work done during the war, for sufficient time has not elapsed to place a just estimate on such work. The book is, however, complete and up to date, and is well illustrated.

Medicolegal

Liability for Typhoid Fever Contracted on Boat

(Chicago, D. & G. B. Transit Co. v. Moore et al. (U. S.), 259 Fed. R. 490)

The United States Circuit Court of Appeals, Sixth Circuit, in affirming decrees in favor of eight out of eleven libelants who sought damages for illnesses alleged to have been contracted on a steamer from Detroit, says that it has no difficulty in affirming the conclusion that contaminated water was, during several hours at least, and through the steamer's negligence, provided for the passengers on board. The boat ran aground in Hay Lake, a broadening out of St. Mary's River, about 12 miles below the Soo, and was not released for about six hours, her sea cocks, from which water was supplied to the boat, being embedded in the mud. When she was released, water was pumped from the river into the fresh-water system, without being sterilized or even filtered, and without any attempt to get rid of the mud in the sea cocks except by blowing out with steam. The record indicated that the water of the river at the point from which the water in question was taken was unfit for human consumption; and the boat's officers recognized this, and did not themselves drink it, nor allow the crew to drink it, the faucet ordinarily available to the crew being wired up. Nor was the water served on the table. But neither the faucets in the staterooms nor the fountains in the saloon were sealed, nor was any notice given to passengers that the water obtainable therefrom was not wholesome. In this the steamer was clearly negligent; for it could not be assumed that passengers would refuse to drink the water merely because it was roily.

As opposed to these and kindred considerations were the facts that the water in question was not shown by actual analysis to have contained the typhoid germ; that other methods of infection, as by flies, milk and otherwise, were possible; and that the possibility of infection by other means than the water in question was not conclusively negatived. In fact, it must be conceded that the existence of the typhoid germ in the water taken from the river, and served on board the boat, was not proved beyond all possible doubt. But such degree of proof was not necessary. A preponderance of the evidence, a showing of greater probability, was all that was required, and in this court's opinion the evidence preponderated in favor of the final conclusion of the court below. Indeed, there were several features which, taken together, persuasively pointed to that conclusion, including (*a*) the fact that so large a number of typhoid cases was shown to have developed on the boat; and (*b*) that, so far as appeared, there were no typhoid cases among the passengers on a sister ship which passed over the course at approximately the same time, but which did not take water from the river.

Each of seven of the libelants having been attended throughout his illness by a reputable local physician, and in each case the disease having been pronounced unquestionably typhoid or of that nature, and treatment given accordingly, this court must reject the contention that the testimony of these physicians was unreliable because based only on clinical sympoms. The most that the court would be justified in concluding here is that, in the absence of confirmation by laboratory tests, a clinical diagnosis of typhoid fever is not absolutely conclusive. But the results of evidence in cases of this nature do not require absolute scientific certainty, and the court thinks the testimony of the attending physicians established, by a fair preponderance of the evidence, the existence of typhoid or similar fevers. That in the case of each of several of the libelants, expert medical witnesses of high standing expressed the opinion that, on the hypotheses contained in the question submitted to them, the patient was not suffering from typhoid fever, at most raised only a question of fact.

The court also thinks that there was sufficient evidence in the case that one of the libelants contracted arthritis as a result of drinking the impure water, and that in another passenger an attack of gallstones was the direct and immediate result of typhoid fever caused by drinking the water.

An award of $1,500 damages as actual compensation for pain and suffering from typhoid fever, the court holds cannot be considered excessive; and in addition to that, it approves of various allowances for loss of time and services to business, while, in the gallstone case, in addition to the allowance for pain and suffering from typhoid fever, $2,000 for past and future suffering on account of the gallstone trouble, as well as $1,545.69 for medical expenses incident to the typhoid fever and gallstone trouble combined, are approved.

Chiropractor as Assistant to Regular Physician

(State v. Young (Mo.), 215 S. W. R. 499)

The St. Louis Court of Appeals says that the defendant, who was charged with practicing medicine without a license from the state board of health, admitted that he was a chiropractor, but contended that he was engaged as an assistant to a regularly licensed physician, and offered evidence to that effect, which was excluded. But such exclusion was not error, as the defendant could not escape the effect of the statute by showing that in practicing his profession he was employed by another and acted under another's direction. Under the law of Missouri, one engaged in chiropractic is practicing medicine. However, the judgment of conviction in this case was reversed, and the cause remanded, because the verdict being general in character was bad, in view of the fact that the information charged separate and distinct offenses, namely, practicing medicine, attempting to practice medicine, and advertising as a physician, without a license. The verdict should have been specific as to whether he was guilty of one or the other of the effenses, or of all of them. As it was, some of the jury may have believed him guilty of one of the offenses, and some of another, while he was entitled to have twelve men believe him guilty of either one or all of the stated violations of the statute.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alpha Omega Alpha Honorary Fraternity, New Orleans, April 26.
American Association for Thoracic Surgery, New Orleans, May 1.
American Association of Anesthetists, New Orleans, April 26-27.
American Association of Physicians, Atlantic City, May 4-5.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Arkansas Medical Society, Eureka Springs, June 8-9.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Association of American Peroral Endoscopists, Boston, June 1.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
California State Medical Society, Santa Barbara, May 11-13.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Maryland, Med. and Chir. Faculty of, Baltimore, April 27-29.
Massachusetts Medical Society, Boston, June 8-9.
Medical Veterans of the World War, New Orleans, April 26-27.
Michigan State Medical Society, Kalamazoo, May 25-27.
Mississippi State Medical Association, Jackson, May 11-12.
Nebraska State Medical Association, Omaha, May 24-26.
New Hampshire Medical Society, Concord, May 12-13.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
Rhode Island Medical Society, Providence, June 3.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

March, 1920, **159**, No. 3

*Physical Signs of Foreign Bodies in Bronchi. T. McCrae, Philadelphia.—p. 313.

*Oculopupillary Fibers of Sympathetic System: Division of First Thoracic Root in Man. W. G. Spiller, Philadelphia.—p. 325.

*Epidemic Acute and Subacute Nonsuppurative Inflammations of the Nervous System Prevalent in the United States in 1918-1919: Encephalitis; Encephalomyelitis; Polyneuritis; Meningo-Encephalo-Myeloneuritis. L. F. Barker, E. S. Cross and S. V. Irwin, Baltimore.—p. 337.

*Pleural Effusion with Inversion of Diaphragm Producing an Abdominal Tumor; Acute Pulmonary Edema Following Tapping. D. Riesman, Philadelphia.—p. 353.

*Retroperitoneal Liposarcoma: Chemical Analysis. E. F. Hirsch and H. G. Wells, Chicago.—p. 356.

Vascular Reactions in Vascular Hypertension. J. P. O'Hare, Boston.—p. 369.

Dangers of Ascariasis. B. C. Crowell, Rio de Janeiro, Brazil.—p. 380.

*Evidence of Nephritis and Urinary Acidosis. J. H. Barach, Pittsburgh.—p. 398.

*Association of Fever with Fracture of Skull. A. O. Wilensky, New York.—p. 402.

Subcutaneous Emphysema: Complication of Influenzal Pneumonia. Report of Seven Cases. J. Meyer, Chicago, and B. Lucke, Philadelphia.—p. 417.

*Gross Pathology of Influenzal Pneumonia in France. H. Bakwin, New York.—p. 435.

Chronic Nontuberculous Lung Infection. C. G. Field, Iowa City, Iowa.—p. 442.

*Psychologic Theory of Cause of Epilepsy: Special Reference to Abnormal Muscular Expression of Strong Emotional Drive. C. A. Marsh, Newcastle, Ind.—p. 450.

Physical Signs of Foreign Bodies in Bronchi.—Decreased expansion on the affected side, the presence of very fine râles and the "asthmatoid wheeze," McCrae regards as signs of value in the diagnosis of foreign body in a bronchus. Some foreign bodies, such as a peanut, set up a very acute general process which is fairly distinctive. Other structures, such as metallic objects, cause permanent changes, usually in a lower lobe. The chief errors in diagnosis are to mistake the signs for those of pneumonia in the early stages and in the acute cases, and for tuberculosis after the body has been present for some time.

Oculopupillary Fibers of Sympathetic System.—The conclusion is formulated by Spiller that in man the oculopupillary fibers do not decussate, or at least in very slight degree, in the pons or below this in the medulla oblongata or cervical cord. In two cases of tubercle of the pons, which is a lesion destroying the axis cylinders where it exists and not permitting them to pass through as does glioma, the oculopupillary symptoms were on the side of the lesion. Spiller has repeatedly seen oculopupillary paralysis of the sympathetic on the side of the lesion resulting from occlusion of the posterior inferior cerebellar artery. This occlusion produces softening in the lateral part of the medulla oblongata. Spiller admits the possibility that the sympathetic fibers may decussate in the cerebral peduncle, but says the evidence of this is far from conclusive.

Encephalitis.—In the experience of Barker and others a cell count in the cerebrospinal fluid of from ten to 100 small mononuclears, along with a positive globulin reaction, with negative Wassermann and negative bacteriologic smears and cultures, is, at the time of an epidemic of encephalitis, strong corroborative evidence of the existence of the disease in a patient in whom the process is for any other reason suspected to exist. Negative findings in the cerbrospinal fluid do not, however, rule out the diesase. The clinical course of the disease is discussed and eight cases are analyzed. A very fine list of selected references is given, including papers of importance as earlier sources of conception of nonsuppurative encephalitic syndromes; papers on nonsuppurative encephalitis by American authors (before the present epidemic); papers on the pathologic anatomy and histology of nonsuppurative encephalitis; papers on the recent epidemic of nonsuppurative encephalitis North American, South America, Great Britian, France, Oceanica (Australia), Austria, Germany and Africa.

Pleural Effusion with Inversion of Diaphragm Producing an Abdominal Tumor.—On the occasion of a necropsy, Riesman found in the left upper abdominal quadrant a large, smooth, tense tumor, which on further exploration, proved to be a bag made by the inverted diaphragm and filled with pleural fluid. Since then he has seen this tumor twice, clinically. The condition is a mechanical result of great intrapleural pressure.

Retroperitoneal Liposarcoma.—Hirsch and Wells report the microscopic and chemical examination of a retroperitoneal liposarcoma without myxomatous elements, weighing 69 pounds, being the largest solid tumor on record. It illustrates the capacity of malignant tumors to store up protein and fat, despite extreme emaciation of the host.

Evidences of Nephritis and Urinary Acidosis.—The observation made by Barach show that in the most severe type of exertion (Marathon race), albumin and casts and red blood cells occur in all individuals. The casts were of the broad and narrow, hyalin and granular variety. Some of the casts showed red and white corpuscles. The amount of albumin was greatest in those who ran strenuously, finishing earliest, from three hours and fourteen minutes to four hours and fifteen minutes. Observations of the blood pressure and pulse rate in these cases showed that the largest amount of albumin and blood and casts occurred in those individuals who showed the greatest degree of circulatory disturbance. This was manifested by a marked fall in both the maximum blood pressure and in the pulse pressure. In the less strenuous type of exertion are usually found an increased urinary acidity, albuminuria, cylindruria and, at times, blood cells. A critical analysis of these findings, however, shows, first of all, that in the more strenuous effort the amount of albumin, the presence of blood cells and the number and type of casts all depict a more serious renal disturbance than is found in the less strenuous form of exercise. Urinary acidity was increased after exercise in 85 per cent. of the cases, but it did not occur more frequently, nor was the acidity higher in the severe exertion cases than in the milder ones. There is a positive relationship between the degree of albuminuria and cylinduria and the type of physical exertion; but these observations show that no such relationship can be established between the urinary acidity and the occurrence of albumin, casts and blood cells in the urine.

Association of Fever with Fracture of Skull.—Fever occurred in fifteen of a series of seventy-two cases of fracture of the skull recently studied by Wilensky. In another series of cases of fracture of the skull admitted to the hospital in a different period of time, twenty-two patients of a total of seventy-seven developed fever. In the fifteen febrile cases of the first series the fractures were situated in the posterior fossa in six cases and in the middle fossa in two cases; in the others the fractures were distributed over the vertex and sides of the skull. One fracture was compound externally; one communicated with the middle ear and two fractures with the nasal cavities; the others were all closed fractures. Eight of the patients who developed fever died; in four of these the cause of death was a meningitis.

Pathology of Influenzal Pneumonia in France.—One hundred and six necropsies are analyzed by Bakwin. Changes in the rectus muscle were observed in 33 per cent. of the cases. Empyema was rare, occurring in less than 4 per cent. of the cases. Acute laryngitis was comparatively rare, occurring in only six out of thirty-eight larynges examined (16 per cent.). Sphenoid sinusitis was a very common complication and was found in twenty out of twenty-two cases examined (90 per cent.). Seven out of thirty-five antemortem blood cultures showed pneumococci. The rest were sterile, with the exception of one, which showed a meningococcus. The bacteria found in the organs at necropsy were varied; *Streptococcus hemolyticus*, the pneumococcus, staphylococcus, nonhemolytic streptococcus, *B. influenzae* and gram-negative cocci being found in the various cases in the order of frequency given above.

Cause of Epilepsy.—Marsh is of the opinion that epilepsy is an abnormal muscular reaction to strong mental states. It is an abnormal expression because such muscular activity does not gain the end for which the emotional state was generated. It is unnatural, also, since it is effort undirected. The epileptic, because of his peculiar make-up cannot avoid the dangers of too great stress as the normal man meets it, but by an emotional drive that cannot be readily checked, labors on to mental exhaustion in unconsciousness. This is not deep enough to involve the motor of life centers of the brain, so a convulsion takes place. Viewing epilepsy in this light, it is now possible, in treating this disorder, to institute more rational methods than has previously been had in surgical procedure and in empirical therapy.

Archives of Internal Medicine, Chicago

March 15, 1920, 25, No. 3

*Studies on Arthritis in Army, Based on Four Hundred Cases. R. Pemberton and J. W. Robertson, Philadelphia.—p. 231.
*Id. Basal Metabolism in Arthritis. R. Pemberton, Philadelphia, and E. H. Tompkins, Boston.—p. 241.
*Id. Studies on Nitrogen, Urea, Carbon Dioxid Combining Power, Calcium, Total Fat and Cholesterol of Fasting Blood. Renal Function, Blood Sugar and Sugar Tolerance. R. Pemberton, Philadelphia, and G. L. Foster, San Francisco.—p. 243.
*Method of Analyzing Electrocardiogram. H. Mann, New York.—p. 283.
*Irritation of Vagus and Hemorrhagic Erosions of Stomach. K. Nicolaysen.—p. 295.
*Clinical Studies on Respiration: VI. Comparison of Various Standards for Normal Vital Capacity of Lungs. H. F. West, Boston.—p. 306.
Experimental Determination of Influence on Abnormal Cardiac Rhythms on Mechanical Efficiency of Heart. J. A. E. Eyster and E. C. Swarthout, Madison, Wis.—p. 317.
*Platelet Count and Bleeding Time in Diseases of Blood. H. C. Gram, Copenhagen.—p. 325.

Arthritis.—Of four hundred cases of arthritis studied by Pemberton and Robertson, it was found that 256 patients had arthritis only; 112 had a combination of arthritis and myositis; twenty-two had myositis only; seven had nerve involvement (neuritis) only, and three were listed as doubtful. One hundred and seven persons were taken sick in the apparent absence of demonstrable surgical foci. Two hundred and ninety-three persons showed demonstrable surgical foci. Of this latter number 208 showed foci in the tonsils. One hundred and thirty-four persons in the entire series were positive for a genito-urinary focus. Seventy-eight showed a combination of both dental and tonsillar foci. It was also found that thirty-eight persons showed some combination of foci other than dental and tonsillar, as for instance dental and genito-urinary or tonsillar and genito-urinary.

Basal Metabolism in Arthritis.—Of the twenty-nine cases studied by Pemberton and Tompkins, 80 per cent. showed a metabolism within normal limits; 20 per cent. showed a metabolism slightly below normal limits. The metabolic data give no explanation for this deviation. From the respiratory quotients no abnormality can be detected in the percentage of calories obtained from the three foodstuffs. Nothing abnormal was found in the pulse, temperature or minute volumes of air breathed at the times of the determinations. In the cases showing a basal metabolism below the normal limits, no particular relation could be determined between the severity of the disease, age or condition of the patient (whether active or bed-ridden), atrophy of muscle, edema or other factors.

Studies on Nitrogen, Urea, Etc., in Arthritis.—In a series of sixty-seven observations in fifty-seven cases of chronic arthritis, the fasting blood nitrogen fell within normal limits in all but two cases. One of these patients had cirrhosis of the liver and renal calculus. He gave 45.4 mg. of nitrogen per hundred c.c. of blood. The other patient had a chronic arthritis of one knee. He gave 38.5 mg. The carbon dioxid combining power of the blood in seventeen cases of chronic arthritis fell well within normal limits. The same was true of the calcium of the circulating blood, and the total fat and cholesterol of the fasting blood. The authors go into considerable detail in their discussion of a definite relation between the intake of food on the one hand, and the incidence or perpetuation of symptoms of the disease on the other in cases of chronic arthritis. This relation is best illustrated by the fact that the institution of a reduced diet in appropriate cases may be followed by marked benefit. Of the three foodstuffs, the evidence at hand, although not yet complete, has indicated that carbohydrate is most concerned in this connection. Studies were carried out in sixty cases of arthritis on the fasting level of the blood sugar and on the response of these cases to the so-called glucose tolerance test. The results are given in full. Experience suggests that the sugar tolerance test may sometimes be helpful to indicate whether all foci of infection have been removed. The disturbance of the sugar tolerance due to focal infection, apparently accompanies the failure of the organism successfully to maintain its wall of defense and is apparently restored to normal when this defense returns. In this light a lowered tolerance, following on a focus, becomes an intermediary, or, at least, a concomitant step in the pathology of arthritis and possibly other conditions as well.

Analyzing Electrocardiogram.—A new method is presented by Mann in which the ordinary three leads of the electrocardiogram are combined in a single curve, the monocardiogram. The usefulness of this method of analyzing the electrocardiogram is explained.

Irritation of Vagus and Stomach Erosions.—All of Nicolaysen's experimental observations were made on animals. Ten cases in human beings were observed clinically. In the first group of six cases, irritation of the vagus was produced during the course of the illness which in every case was situated in the brain or its membranes. In the second group of three cases the disease involved the chest, the lungs and pleura being the seat of infiltrating processes. In a case of cancer of the breast with metastases in the lung and pleura there was infiltration of the vagus and symptoms of vagus paralysis. In one case, one of peritonitis with empyema, it is possible that there may have been involvement of the nerves of the stomach in the abdomen as well as in the thorax, although the proof that such was the case cannot be supplied. The vagus nerves and the nerves of the stomach in these ten cases should have been examined microscopically, but the material was gathered originally in the course of a study of ulcer of the stomach; it was only later that Nicolaysen's attention was directed to the hemorrhagic erosions of the stomach in these cases. The results of the study shows that in most of the cases in which hemorrhagic erosions were found, there had been irritation of the vagus or the possibility of such irritation. To conclude from these cases that hemorrhagic erosion always results from irritation of the vagus does not seem warranted, in Nicolaysen's opinion. It is possible, that in some of these cases it concerns a coincidence. However, Benke's results and the pilocarpin experiments in rabbits favor the conclusion that vagus irritation may cause erosions.

Determination of Normal Vital Capacity.—A group of 129 persons were studied by West for the purpose of comparing various standards for determining the normal vital capacity. A standard based on the body surface area is advised, since it has been shown that the vital capacity varies with this function more uniformly than with others tried. When the weight of the patient cannot be obtained, a standard based on the height is recommended.

Platelet Count in Diseases of Blood.—The method of Oluf Thomsen for counting the platelets in citrated plasma is described by Gram. The number of platelets in normal individuals lies between 200,000 and 500,000. The platelets are diminished in number in pernicious anemia, in most cases of lymphatic leukemia and in some cases of myeloid leukemia. Normal values are found in hemophilia, and augmented values are found in many cases of simple anemia and some of myeloid leukemia. The diagnostic and prognostic importance of the platelet count in diseases of the blood is discussed. The bleeding time determination of Duke helps to disclose a latent hemorrhagic diathesis due to platelet deficiency, as symptoms may not appear without a provocative cause. It is shown that platelet counts of less than 100,000 per c.mm. generally cause a tendency to bleed. The counting of the

platelets and determination of the bleeding time is considered by Gram as of extreme importance as a preoperative measure, especially in cases of aplastic anemia, in which an operation often is performed for explorative, occult cancer being suspected.

Boston Medical and Surgical Journal

March 11, 1920, **182**, No. 11

Malignancy and Radiation. Study of Relation of Structure of Cancer Tissue to Radiation. F. Bryant, Worcester, Mass.—p. 263.
Cesarean Section. N. W. Emerson, Boston.—p. 272.
Next Step in Campaign for Infant Welfare. Education of Women of Nation for Motherhood. I. W. Brewer, Watertown, N. Y. —p. 276.

Journal of General Physiology, Baltimore

March 20, 1920, **2**, No. 4

Device for Regulating Temperature of Incubators Either Above or Below Room Temperature. J. H. Northrop, New York.—p. 309.
Hereditary Adaptation of Organisms to Higher Temperature. J. H. Northrop, New York.—p. 313.
Stereotropism as a Function of Neuromuscular Organization. A. R. Moore, Woods Hole, Mass.—p. 319.
Regeneration and Neoteny. E. Uhlenhuth, New York.—p. 325.
Comparative Studies on Respiration. Toxic and Antagonistic Effects of Magnesium in Relation to Respiration of Bacillus Subtilis. M. M. Brooks, Cambridge, Mass.—p. 331.
Intensity and Process of Photoreception. S. Hecht, Omaha.—p. 337.
Labyrinth and Equilibrium. Mechanism of Dynamic Functions of Labyrinth. S. S. Maxwell, Berkeley, Calif.—p. 349.
Studies in Dynamics of Histogenesis. Tension of Differential Growth as Stimulus to Myogenesis. E. J. Carey, Omaha.—p. 357.
Nature of Directive Influence of Gravity on Arrangement of Organs in Regeneration. J. Loeb, New York.—p. 373.
Cause of Influence of Ions on Rate of Diffusion of Water Through Collodion Membranes. J. Loeb, New York.—p. 387.
Effect of Temperature on Facet Number in Bar-Eyed Mutant of Drosophila. J. Krafka, Jr., Urbana.—p. 409.

Journal of Immunology, Baltimore

November, 1919, **4**, No. 6

*Influence of Desiccation on Natural Hemolysins and Hemagglutinins in Human Serum. J. A. Kolmer.—p. 393.
*Nature of Thermolabile Hemolysins. J. A. Kolmer, Philadelphia. —p. 403.
Complementary and Opsonic Functions in Their Relation to Immunity. A Study of the Serum of Guinea-Pigs Naturally Deficient in Complement. H. D. Moore, Burlington, Vt.—p. 425.

Influence of Desiccation on Natural Hemolysins and Hemagglutinins.—Kolmer maintains that drying normal human serum on cover glasses and in paper at ordinary room temperatures frequently results in marked or complete deterioration of the normal isohemagglutinins. Deterioration of these normal isohemagglutinins is especially evident within the first to fourth days after the serums have been dried. Similar results were observed with hemagglutinins in normal human serums for the corpuscles of the lower animals. Human serums containing large amounts of normal hemagglutinins when dried under ordinary conditions and properly kept in a refrigerator may prove satisfactory for microscopical tests for at least two weeks, due to the presence of sufficient agglutinins escaping destruction. Only such serums should be used for drying and tests should be made at the end of the first week to determine if agglutinins are present before the cover glasses are used for the typing of bloods. The hemolysins found in normal human serums for the corpuscles of persons and the lower animals also deteriorate on desiccation under ordinary conditions and are somewhat more susceptible than the hemagglutinins. For the grouping of blood, serums should be kept in a fluid state sealed in ampoules at a low temperature, both hemagglutinins and hemolysins in normal human serums being highly susceptible to heat.

Nature of Thermolabile Hemolysins.—The experiments reported on by Kolmer indicate that the natural hemolysins in human serums are distinct substances and not differentiated complements. Natural hemolysins are susceptible to heat being inactivated (masked) or destroyed when serums are heated at 56 C. and totally destroyed by heating at 62 C. The natural hemolysins in human serums vary in resistance to heat, antisheep hemolysin being most resistant (thermostable) and antiguinea-pig hemolysin being most susceptible (thermolabile).

Medical Record, New York

April 3, 1920, **97**, No. 14

*Infection of Intestinal Origin Complicating Pregnancy, Labor, and Puerperal State. E. P. Davis, Philadelphia.—p. 551.
*Mental Deficiency and Criminality. M. G. Schlapp, New York. —p. 554.
Ductless Glands and Constitutional Diagnosis. J. Gutman, Brooklyn.—p. 558.
Mental Hygiene During Childhood. I. S. Wile, New York.—p. 561.
Electronic Reactions of Abrams: Obert Phenomena. A. Abrams, San Francisco.—p. 565.
Psychoanalysis of Heart. A. R. De Janis, Boston.—p. 568.

Bearing of Intestinal Infection on Pregnancy.—The intestine in the human being swarms with bacteria, notably the colon bacillus. The mechanical conditions prevailing in the abdomen as pregnancy advances are such that interference with the peristalsis of the bowel and the accumulation of fecal matter during pregnancy are inevitable. In addition to this, congestion of the abdominal viscera must be present to some degree during pregnancy in the majority of patients, and a combination of these two conditions, Davis says, furnishes a state of affairs exceedingly favorable for the development of infection of intestinal origin. This may manifest itself most frequently in appendicitis, cholecystitis, infection of the lymphatics of the intestine and peritoneum, or infection of the blood stream. While some patients pass through pregnancy without the use of purgatives and laxatives this is not true of the majority. What is described is to render the fecal mass in the bowels soft and unirritating and to promote peristalsis and to keep the bowel in a tonic condition. In the use of drugs care must be taken that the ganglia in the uterine muscle are not stimulated to contraction by drugs which stimulate peristalsis of the bowel, for excessive uterine peristalsis will cause abortion. That there is danger in the prolonged retention of hard feces in the intestine of the pregnant woman has been demonstrated. What is especially needed to promote intestinal peristalsis in pregnancy is exercise by walking. Where this cannot be procured, calisthenic exercises during pregnancy are of considerable value, and should these be impossible massage by skilful hands may often be employed to great advantage. Exercise, cold bathing followed by gentile rubbing, the plentiful use of fruit, water and cereal foods, and regular and systematic attention to the matter will enable many patients to pass through pregnancy without the use of purgatives. If laxatives are necessary, refined petroleum with compound licorice powder, is often successful. In the presence of toxemia, drugs which act vigorously on the eliminative organs must be used, but without this indication purgation during pregnancy should be avoided.

Observation Hospital for Mental Defectives.—Schlapp urges the erection of a detention hospital where all persons suspected of defectiveness can be examined properly and their condition ascertained. There should be the closest of contact between this hospital and the courts and other public institutions. The proper execution of tests requires periods of fasting, quiet, and observation, which cannot be observed unless the patient is detained. Besides reception and consultation rooms, wards, recreation, and living quarters, such an institution as would meet the requirements must have laboratories fully equipped both for complete tests and research. Every provosion should be made for prompt and thorough examination by a staff of specially trained observers and nurses and there should be either a sufficient endowment fund or an assured appropriation in order to prevent embarrassment, or limitation in the scope of work.

Missouri State Medical Ass'n Journal, St. Louis

April, 1920, **17**, No. 4

Pneumoperitoneum. John L. Tierney, St. Louis.—p. 137.
*Clinical Value of Complement Fixation Test for Tuberculosis. E. P. Buddy, St. Louis.—p. 145.
*Interpretation of Complement Fixation Reaction in Tuberculosis. George Ives, St. Louis.—p. 147.
Medical Problems Suggested by War. Roland Hill, St. Louis.—p. 150.
Goiter. James B. Williams, Joplin.—p. 155.
Infection. A. C. Ames, Mountain Grove.—p. 157.

Value of Complement Fixation Test for Tuberculosis.—Buddy analyzed this test in thirty-six cases of suspected

tuberculosis. Twenty patients, or 55.5 per cent., gave a positive reaction. There were eight positive Wassermanns and six clinically diagnosed as having syphilis and tuberculosis. Of sixty-nine cases with diagnosis other than tuberculosis, twelve, or 17.3 per cent., gave positive complement fixation tests. Of the sixty-nine cases, one in every 5.7 cases gave a positive complement fixation reaction and one in every 8.6 cases gave a positive Wassermann. Buddy points out that the complement fixation test for tuberculosis is of some value in the cases of positive tuberculosis. A negative reaction in this class usually indicates far advancement with every grave prognosis. It has a clinical value as additional evidence in clinically active tuberculosis. In suspected cases it has a slight value only in being an additional factor for or against tuberculosis. A diagnosis of clinical tuberculosis cannot be made from a positive reaction, neither can tuberculosis be excluded from negative reaction. It is not of so much value in tuberculosis as the Wassermann reaction is in syphilis. It is an aid only when considered in conjunction with complete history and thorough physical examination.

Id.—Ives maintains that this test can never determine positively whether or not a patient is ill with tuberculosis. On the other hand, the results of the test are in fairly close harmony with the true condition of the patients who have been tested, and hence the test should influence judgment in arriving at a diagnosis. This test should not displace clinical observations, but if properly used it will stimulate the clinician to make more accurate and thorough observations.

Modern Medicine, Chicago

March, 1920, **2**, No. 3

Untilled Fields of Public Health. C. E. A. Winslow, New Haven.—p. 183.
Influence of War Concepts of Mental Diseases and Neuroses. S. I. Schwab, St. Louis.—p. 192.
Hemiplegia, Spontaneous and Traumatic. W. D. Wise, Baltimore.—p. 200.
Industrial Medicine. N. Barnesby, New York.—p. 226.
War Contributions to Industrial Surgery. S. R. Maxeiner, Minneapolis.—p. 231.
Welfare Work in a Japanese Electric Plant. G. M. Price, New York—p. 235.
Survey of Public Health Topics. J. Schevitz, Oklahoma City.—p. 242.
Detection of Typhoid. F. M. Meader, Albany.—p. 244.
Reduction of Infant Mortality. D. M. Lewis, Charleston, W. Va.—p. 247.
Trade Union Disability Insurance. B. Emmet, Baltimore.—p. 250.
Why a Public Health Nurse? G. M. Rines, Armour, S. D.—p. 262.

Philippine Journal of Science, Manila

October, 1919, **15**, No. 4

Formosan Termites and Methods of Preventing Their Damage. M. Oshima.—p. 319.
New Scale Insect on Rhizophora. T. D. A. Cockerell.—p. 385.
Balantidium Haughwouti, N. Sp. Parasitic in Intestinal Tract of Ampullaria Species. W. De Leon.—p. 389.

Public Health Journal, Toronto

March, 1920, **11**, No. 3

Ventilation. J. J. R. MacLeod.—p. 101.
Recreation as Public Health Measure. A. B. Dawson.—p. 119.
Mentally Deficient in Ontario. J. Hodgins.—p. 126.
Why Community Organization? A Statement of a Need and Some Suggestions for Meeting It. J. Collier.—p. 135.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, London

January, 1920, **7**, No. 27

Specimens of Long Bones in British Army Medical Museum Showing Processes of Infection and Repair. A. Keith and M. E. Hall.—p. 302.
*Loss of Abdominal Reflexes in Affections of Abdomen. G. Williams.—p. 320.
*"Monobloc" Operative Treatment of Tuberculous Lymphangitis; Report of Case. W. S. Handley.—p. 324.
*End Results in Partial Amputations of Foot. S. T. Irwin.—p. 327.
Hemangioma Group of Endotheliomata. J. Fraser.—p. 335.
Morbid Consequences of Mobile Ascending Colon; Record of 180 Operations. G. E. Waugh.—p. 343.
*Results of Bridging Gaps in Injured Nerve Trunks by Autogenous Fascial Tubulization and Autogenous Nerve Grafts. H. Platt.—p. 384.
Excision of Subclavian Aneurysm. L. R. Braithwaite.—p. 390.
*Local Discoloration of Abdominal Wall as Sign of Acute Pancreatitis. G. G. Turner.—p. 394.
Gastric Ulcer: Plea for Gastrectomy: Roentgen-Ray Diagnosis. H. B. Scargill.—p. 396.
*Fracture of Atlas Vertebra. G. Jefferson.—p. 407.
Idiopathic Dilation of Sigmoid Flexure and Pelvic Colon: Recurring Intestinal Obstruction. G. H. Makins.—p. 423.
Case of Osteitis Deformans (Osteoporosis, Osteomyelitis Fibrosa), With Pronounced Affection of Forearm. H. French.—p. 425.

Loss of Abdominal Reflex in Abdominal Conditions.—Analysis of a considerable number of cases has convinced Williams that the loss of the abdominal reflexes in abdominal conditions may be regarded as a phenomenon of fatigue of the reflex, this fatigue being caused by a previous stimulation of the reflex by a painful affection in the abdominal area; and it is suggested that the fatigue of the reflex may be cerebral rather than spinal. The local loss of the reflex, e. g., the right lower reflex in appendicitis, or the general loss of all four reflexes of a patient whose abdominal wall is in good condition, is of considerable clinical value; but its value is not absolute, and it must be determined together with the other features which go to make up the picture of the case.

Monobloc's Operative Treatment of Tuberculous Lymphangitis.—Although the treatment of tuberculous lymphangitis by the excision of the primary focus, the affected vessels and the glands of which they are afferents, is recognized as, perhaps, the only effective treatment for tuberculous lymphangitis of the limbs, Handley doubts whether the importance of excising all the affected tissues in one piece has been properly emphasized. Obviously, if the removal is carried out in sections, the chances of a reinfection of the wound are greatly increased. He cites a case of tuberculous lymphangitis following injury to a tuberculous wart of long standing in which the result was not perfect, and the policy of attacking the recurrences, which sometimes gives such satisfactory results in carcinoma, was followed with a considerable degree of success. From the microscopic examination of many specimens, Handley is convinced that lupus vulgaris is essentially and primarily itself a lymphangitis of the cutaneous and subcutaneous lymphatics, and that it differs from "tuberculous lymphangitis" only in its slow and limited spread through the lymphatics. The principal reasons for this belief are: The plane primarily affected, namely, the superficial layer of the dermis, is the plane of origin of the lymphatic vessels of the skin. Changes in the lymphatic vessels of origin can be seen beyond the clinical edge of the area of lupus. Moreover, isolated giant cell systems can often be found in the subcutaneous tissue, showing that this layer also is affected as well as the skin, and these isolated giant cell systems are usually found close to the blood vessels, in the situation of the comitant lymphatics.

End Results in Partial Amputations of Foot.—The conclusion reached by Irwin as the result of an investigation of partial amputations of the foot is, that, unless more of the limb can be saved than that found in Lisfranc's amputation, the function of the limb, as estimated by the man's capacity for work, his ability to keep time, and his value as a unit in the general industrial machine, will be improved by the complete amputation of the foot through the ankle joint after the manner of James Syme.

Bridging Gaps in Injured Nerve Trunks by Autogenous Fascial Tubulization and Autogenous Nerve Grafts.—In the eighteen operations analyzed by Platt in which fascial tubulization combined with autogenous nerve grafts, fascial tubulization alone, and autogenous vein tubulization (one case), were used, there was a complete absence of any sign of recovery. The shortest period over which observations were made was four months, the longest period twenty-six months. Secondary exploration in four cases showed complete silence of the nerve trunk to direct faradic stimulation. End-to-end suture was accomplished in all after exsection of the bridged segment. At the re-exploration operations, partial or complete obliteration of the lumen of the fascial tube was noted. In two specimens examined his-

tologically, one, a tubulization alone, showed obliteration of the lumen of the tube by fibrous tissue in which no nerve fibers could be found. In the second, a graft and tubulization combined, nerve fibers were present in the center of the obliterated tubule eighteen months after the operation. There was no sign of continuity between the proximal and distal ends through this strand of nerve fibers. Platt is of the opinion that the early re-exploraion of all graft and fascial bridge operations is advisable.

Local Discoloration of Abdominal Wall as a Sign of Acute Pancreatitis.—The case of a woman, aged 54 years, suffering from an acute abdominal illness of three days' duration, is cited by Turner. On the abdominal wall, surrounding the umbilicus, was an area of discoloration about 6 inches in diameter, of a bluish color, very like the postmortem staining seen on the abdominal wall or the appearance of the skin in a late case of extravasation of urine. The area was slightly raised, and pitted on pressure. The patient suffered from acute pancreatitis, with much effusion into the peritoneal cavity. She lived nine days after operation, and the postmortem examination disclosed a sloughing pancreas with much fat necrosis. In another similar case there were two large discolored areas in the loins. They were about the size of the palm of the hand, slightly raised above the surface, and of a dirty greenish color. There was a little edema with pitting on pressure, but there was no pain or tenderness. The urine was full of sugar. A diagnosis of acute pancreatitis was made; and this was confirmed by an immediate operation. Turner says he has never seen mention made of this sign.

Fracture of Atlas Vertebra.—Four cases of fracture of the atlas vertebra are described by Jefferson, and forty-two cases previously recorded in the literature are analyzed. The common cause of the accident is a fall on the head, and the probable mechanism of fracture is tension of the atlas ring due to lateral spreading of the lateral masses, owing to the divergence of the lines of force passing through the bone. Two other possible mechanisms are outlined, the head being in extreme extension, but neither fits in with the nature of the accidents usually recorded. Atlas fracture is by no means necessarily fatal; 45.7 per cent. of the patients have recovered. When complicated by a fracture of another vertebra, the mortality is higher. The commonest of such complications is a fracture of the odontoid process, next in frequency being rotary dislocation of the atlas on the axis. It is pointed out that inability to rotate the head may occur in some forms of atlas fracture. It is not pathognomonic of a broken odontoid. The accident is probably by no means uncommon, but as very clear and sharp roentgenograms are necessary in order that the fracture may be detected, the atlas injury is often overlooked. Cord injury is often absent (50 per cent.). Useful aids in diagnosis may be obtained from signs of injury to the great occipital nerve. Treatment will generally be conservative, directed to immobilizing the head by a "Minerva" plaster or a Lorenz bed.

Glasgow Medical Journal

March, 1920, **11**, No. 3

Practical Significance of Attention to Detail in Abdominal Operations. A. E. Maylard.—p. 97.
Dr. Dover of Powder Fame. W. Downie.—p. 112.
Ocular Sequels of Malaria. W. H. Manson.—p. 127.

Journal of Laryngology, Rhinology and Otology, London

March, 1920, **35**, No. 3

Adenomata (Glandular Tumors) of Larynx. I. Moore.—p. 65.
Anatomy of Membranous Labyrinth. J. K. Dickie.—p. 76.
Semicircular Canals: Simple Method of Demonstrating their Relative Position to Each Other and Their Planes of Incidence. J. D. Lithgow.—p. 81.
Digital Retraction of Epiglottis During Indirect Laryngoscopy. A. Ryland.—p. 82.

Journal of State Medicine, London

March, 1920, **28**, No. 3

Sanatorium Treatment of Pulmonary Tuberculosis. J. Watt.—p. 65.
Venereal Disease: A Plea for Statesmanship. A. Corbett-Smith.—p. 86.
Public and Individual Housing Ideals. S. A. Barnett.—p. 91.

Journal of Tropical Medicine and Hygiene, London

March 1, 1920, **23**, No. 5

Sadd Dermatitis. A. J. Chalmers and A. F. Joseph.—p. 57.
*Treatment of Three Cases of Malignant Tertian Malaria. P. J. Veale.—p. 59.

Malignant Tertian Malaria.—Veale treated three cases of malignant malaria by injecting intravenously a solution of disodium hydrogen phosphate and sodium chlorid in a strength of 3 per cent. each, the dose varying from 60 to 100 c.c., with excellent results. These patients had been given prophylactic quinin in varying doses before admission. All showed the gametes of *P. falciparum* in the blood, and the primary object was to clear these very resistant bodies from the blood. No quinin was administered during the time of observation.

Practitioner, London

March, 1920, **104**, No. 3

Postdysenteric Colitis: Seat of Lesion and its Treatment. J. Cantile.—p. 161.
Tests for Tuberculosis of Lungs and for Consumption. H. B. Shaw.—p. 167.
Medicolegal Notes. J. Collie.—p. 181.
Dislocation of Shoulder Joint and its Treatment. A. H. Todd.—p. 186.
Modern Conceptions of Heart Disease. W. Edgecombe.—p. 197.
Recent Work on Tropical Diseases. R. T. Hewlett.—p. 210.
Cause and Treatment of Abdominal Hernia. W. B. Cosens.—p. 220.
Ciliæ of Respiration. C. O. Jones.—p. 228.
Plea for Compulsory Restraint on Use of "Domestic Measures" in Administration of Medicine. H. O. Gunewardene.—p. 235.

Sei-I-Kwai Medical Journal, Tokyo

Oct.-Dec., 1919, **38**, Nos. 10-12

*Comparative Study of Bruck and Wassermann Reactions. M. Terada.—p. 44.
Action of Adrenin and Various Extracts of Glandular Organs on Veins. Tugane.—p. 51.

Comparison of Bruck and Wassermann Reactions.—Terada made a comparative study of both reactions by using the serum of 150 syphilitic and nonsyphilitic patients whose cases were clinically diagnosed. In the primary stage of syphilis, Wassermann's reaction was positive in seventy-five cases, Bruck's reaction was positive in fifty cases; in the secondary stage (of syphilis), the former was positive in eighty-eight cases and the latter in eighty-five cases. In the tertiary stage, Bruck's reaction was positive in eighty-six cases and the Wassermann in eighty cases. In cases in which the presence of syphilis was very doubtful, the Wassermann reaction was positive in thirty-nine cases and Bruck's reaction was positive in forty cases. Finally, in nonsyphilitic cases, the Wassermann was positive in twelve cases and Bruck's reaction was positive in twenty-five cases. Bruck's reaction always showed a smaller positive percentage than Wassermann's in each stage of syphilis, while Bruck's reaction always indicated a higher positive percentage than Wassermann's in nonsyphilitic cases. Terada recommends Bruck's reaction as an aid in the diagnosis of syphilis when a complicated method, such as Wasserman's reaction, cannot be used. Naturally, however, the decision of a serious question such as the diagnosis of syphilis should never depend on Bruck's reaction alone.

Archives des Mal. du Cœur, etc., Paris

November, 1919, **12**, No. 11

*Anemia in Young Children. E. Lenoble.—p. 481.
*Rachitis with Embryonal Bone Marrow. Idem.—p. 488.
*Functional Aortic Insufficiency. J. Bret.—p. 494.
Interpretation of Oscillometer Findings. E. May.—p. 502.

Anemia in Young Children.—Lenoble reports a case of pseudoleukemic anemia, or actual myeloid leukemia with anemia, in a child of 3, the blood picture the reverse of the usual formula in children. He comments that the rôle of hematology and pathologic anatomy has been well studied in anemia but the rôle of parasitology and serology has scarcely begun to be investigated. Another boy of 3 presented hemolytic jaundice of the pernicious anemia type, with intestinal hemorrhages for over a year. The tint was more waxy than jaundice, and the upset in the blood picture suggested

that a parasite or toxin was responsible. There was nothing to suggest syphilis in either case.

Rachitis with Embryonal Bone Marrow.—The infant of 17 months had rachitis and inherited syphilis, but Lenoble exonerates the spirochete from the responsibility for the rachitis, the blood being approximately normal. But the bone marrow of the femur showed what he calls *réviviscence embryonnaire,* of the type described by Dominici as latent myeloid reactions. This finding is particularly important in connection with the theory that rachitis is primarily a disease of the bone marrow—a reaction of the bone marrow to chronic infections and intoxications.

Functional Aortic Insufficiency.—Bret's experience with seven cases seems to warn that the Corrigan syndrome without true diastolic hypotension is probably of functional nature. Functional aortic insufficiency may be found in the course of chronic nephritis, associated or not with adherent pericardium. It is a disturbance in the heart action rather frequently observed with high blood pressure. Mechanical factors elsewhere in the aorta may contribute to its production, as he explains.

Journal de Médecine de Bordeaux

Feb. 10, 1920, **91**, No. 3

*Cicatricial Stenosis of the Larynx in Children. E. J. Moure.—p. 59.
*Sarcoma of Kidney. Oraison and Faure.—p. 60.
*Variations in Acidity of Gastric Juice in Vitro. H. Barthe and Malgoyre.—p. 63.
*Colloidal Therapeutics. J. Vergeley.—p. 64.

Cicatricial Stenosis of the Larynx in Children.—Moure refers to conditions left after long wearing of a tracheotomy tube. When the opening for it had been made not in the trachea but through the tissues above, the stenosis can be corrected more easily than where the opening is in the trachea itself. It is better not to attempt the operation on children under 7 or 8 as the passages are so small, and the laryngostomy followed by cleaning out the cavity and consecutive dilation may entail pulmonary complications. If the stenosis is the result merely of a bad position of the tube, correcting its position may cure the stenosis, which is inflammatory rather than cicatricial. Patience is necessary here, watching over the throat to prevent exuberant granulations around the tube, excising them from time to time and cauterizing with the actual cautery or with 1 per cent. zinc chlorid. In time the passage will become permeable, but the tube should never be discarded without ascertaining with the mirror that the vocal organ is freely permeable. The children have to be trained to breathe through the natural passages, by plugging the tube during the day and, later, at night. There is no need to use special tubes for the purpose. Even if the stenosis is from cicatricial tissue inside the larynx, it can only benefit from the above measures, being in better condition for the correcting operation when the child has reached the proper age. In a case described in a boy of 3, the tube had been introduced just below the thyroid, and the opening had filled up with granulations which had to be excised or cauterized every two weeks for over two years. Then the opening gradually healed, and three years after the tracheotomy had been done, the training of the child to breathe through the natural passages was begun. In four months the tube could be discarded, and several months later the tracheal fistula was closed. The boy is now 10 and the larynx and trachea have developed apparently normally.

Sarcoma of the Kidney.—The young man suddenly developed symptoms suggesting right pyelonephritis. Intense anemia and progressive weakness imposed nephrectomy although there was no hematuria and the functioning of the kidney did not seem to be much impaired notwithstanding the sarcomatous degeneration. The patient was too weak to rally. The whole course was less than four months.

Variations in Acidity of Gastric Juice in Vitro.—Barthe and Malgoyre present evidence that the gastric juice increases or loses in acidity on standing. Their findings showed a loss of from 10 to 33 per cent. in three cases the forty-eighth hour, and a gain of from 6 to 20 per cent. in the others. In one case there was a loss of 25 per cent., but this was made up and surpassed later, the third day showing an increase of 20 per cent. over the findings when the gastric juice was first drawn.

Colloidal Therapeutics.—Vergely here gives a survey of the field of colloids in therapeutics and the experiences to date with these inorganic ferments, metallic ferments or electric colloid metals as they are variously called. Their catalytic action is explained by their enormous surface. A liter of a 0.5 per thousand solution of colloidal gold, for example, presents a surface of 150,000 square centimeters, while the same weight of gold in a compact form presents a surface of only 50 square millimeters. In therapeutics, they whip up the organism but if it is unable to respond, they can do no good. If the patient is unable to produce more leukocytes, if the opsonic index is too low, there is no chance of success. In selecting the colloid to use, he advises the metal that has been found most active against the bacteria, etc., involved. He adds that injection of a colloid may favor the production of a fixation abscess when this is attempted at the same time. There is a place for colloidal therapeutics, he concludes, besides vaccine therapy and serotherapy, but its principal indication is in chronic disease or infection in which a specific chemotherapy is required.

Lyon Médical

Feb. 10, 1920, **129**, No. 3

*Roentgen Study of Atony of the Digestive Tract of Nervous Origin. F. Barjon.—p. 109.
*Auto-Experimental Study of Pruritus. P. Jourdanet.—p. 116.

Atony of Digestive Organs.—Barjon emphasizes the importance of atony of the esophagus and stomach in the clinical picture of neurasthenia and other nervous disturbances. The discovery of atony of any segment of the digestive tract sustains the assumption of a nervous origin for the various disturbances noted anywhere in the body. If the symptoms from the atony are accepted as of organic origin and an operation is done, the symptoms continue afterward the same as before. He describes three extreme cases, and warns to seek for atony of the digestive tract before operating in all dubious cases.

Auto-Experimental Study of Pruritus.—Jourdanet remarks that as pruritus is a sign that the nerve terminals are suffering, it belongs to the sphere of the neuropathologist. He has been making a detailed study of it in his own person as he could bring it on at will by taking antipyrin. He is subject to itching eruptions when he takes this drug but never has pruritus at other times. His experience confirms that the pruritus is most severe at points subjected to strain or pressure. Scratching fastens, increases, and generalizes the pruritus, as also sudden exposure to air. He received a telegram announcing a death in the family, and an explosion of generalized pruritus followed immediately on this emotional shock, and persisted for an hour.

Paris Médical

Feb. 7, 1920, **10**, No. 6

*Radiotherapy of Uterine Fibromyomas. A. Béclère.—p. 101; of "Primary" Neuralgia. A. Zimmern.—p. 105; of Local Tuberculous Processes. P. Cottenot.—p. 107.
*Radium Treatment of Uterine Cancer. Th. Nogier.—p. 111.
*Radium Puncture in Treatment of Cancer. C. Regaud.—p. 118.
*Radium Treatment of Cancer of Esophagus. Dufourmentel.—p. 124.

Radiotherapy of Uterine Fibromyomas.—Béclère credits Foveau de Courmelles with the first application of the roentgen rays in treatment of uterine fibromyomas. His first communication on the subject appeared January, 1904. Béclère's own experiences with over 400 cases compel the assumption that radiotherapy is applicable to every uterine fibroma except where conditions demand surgical intervention at once. He gives weekly exposures, and records the size of the fibroma at each sitting; this testimony demonstrates the primary and direct action of the rays on the fibromas. In three cases the roentgen rays induced the retrogression of uterine fibromas which had developed several years after the natural menopause.

Radiotherapy of Neuralgia.—Zimmern relates that the success of roentgen treatment of neuralgia by raying the roots of the nerves involved has been remarkably constant in all forms of neuralgia except the facial. Sciatica and neuralgia of the brachial plexus have responded especially promptly and completely. Relatively small doses are required; not more than one or two applications of 3 H units notably attenuate the pains or cure them completely. The area exposed for brachial neuralgia should be from the fourth cervical to the first thoracic vertebra. He has made a special study of radiotherapy of neuralgia since 1913, and increasing experience, he says, has confirmed its value.

Radiotherapy of Local Tuberculous Processes.—Cottenot is the radiologist at the Saint Louis Hospital and his experience confirms the beneficial action of roentgen-ray treatment in many cases of tuberculous gland, joint and bone disease. With osteitis and arthritis he prefers to combine it with immobilization, making as many windows in the cast as possible, so that cross-fire raying can be done. In certain other forms of local tuberculosis, curetting followed by raying seems to insure a permanent cure.

Radium Treatment of Uterine Cancers.—Nogier gives illustrations of the different devices he uses in applying radium treatment to the vagina, uterus or rectum to insure a certain space and filtration between the radium and the tissues, and still have the radium in the heart of the tumor, so as to take advantage of all the rays.

Radium Puncture in Treatment of Cancer.—Regaud refers to needles loaded with radium emanations and plunged into the neoplasm. The circles of influence from the radium emanations thus overlap and the entire area of the cancer is subjected to the treatment. In a cancer of the breast, for example, twenty-five needles can thus be plunged into the breast and others run horizontally through enlarged glands in the axilla. One of the illustrations shows four radium puncture needles thus implanted in a neoplasm in the tonsil, with safety threads attached to the needles. He warns that this radium puncture is so potent that it is harmless only by keeping the needles scrupulously from encroaching on sound tissue. The fifty cases he has thus treated in the last eight months are too recent for a final judgment as to the outcome; all were inoperable cases.

Radium Treatment of Cancer of the Esophagus.—Dufourmentel reports a few cases in which the patients have been relieved from pain, and swallowing has been improved, and there has been a gain in weight during the five months or more since radium treatment of the cancer of the esophagus is being systematically applied. Others have survived for from thirteen months to three years, and during this remission they were relieved of pains and dysphagia.

Progrès Médical, Paris

Feb. 7, 1920, **35**, No. 6

Case of Spleen—Ganglia Form of Myeloid Leukemia with Subacute Course. J. Chalier and R. Crémieu.—p. 57.
The Crisis in Infectious Diseases. M. Loeper.—p. 58.
Protein Therapy. H. Paillard.—p. 61.

Schweizerische medizinische Wochenschrift, Basel

Feb. 19, 1920, **50**, No. 8

*Diabetes in Wartime. D. Gerhardt.—p. 141.
*Adaptation of the Parasite to Its Host. B. Galli-Valerio.—p. 143.
Getting Patients Up Early After Childbirth and Operations. Häberlin.—p. 148.
*Tuberculosis and Abortive Treatment of Syphilis. Tièche.—p. 149.

Diabetes in Wartime.—Gerhardt observed eleven cases of diabetes in soldiers which began with high glycosuria and great loss of weight, but under dietetic measures it subsided to a final complete cure after return home. Emotional stress and nervous influences may have cooperated, but the diabetes was influenced by dieting as readily as any diabetes. In 11 cases of war diabetes in the Würzburg hospital, 2 died in coma within three months of the onset of symptoms; a third died in coma after a carbuncle although he had been in good condition notwithstanding high glycosuria for two years. The others improved under treatment and were discharged. Among the 16 civilian cases, 3 died in coma and 3 showed no benefit from treatment, but all the others were materially improved. The dietetic restrictions of the war seemed to have rather a favorable influence on diabetes, and the lessons learned therefrom will benefit diabetics in future. Various explanations for this have been given, but Gerhardt ascribes it to the low calory content of the food, and especially the small proportion of albumin, and the large proportions of carbohydrate-containing vegetables. It is seen to be not necessary to exclude meat and cheese absolutely. The diabetics did even better on this diet than if they had conscientiously followed a strict antidiabetic diet without careful medical supervision. Too little carbohydrates may do harm as well as too much.

Adaptation of Parasites to the Host.—Galli-Valerio cites a number of observations in which it has been possible to trace the adaptation of a protozoon from the exterior to a casual host until it became an actual parasite; or, after being a parasite of one species, it adapted itself to another. The sequence is usually through the invertebrates to the vertebrates. His long review of the subject emphasizes anew the importance of comparative pathology and parasitology for human pathology and epidemiology. It shows how a new parasitic disease is liable to develop among us at any moment. Such was the case with the trench foot of the war. It shows further the danger for man from the widespread prevalence of flagellata among the invertebrates.

Tuberculosis and Abortive Treatment of Syphilis.—Tièche warns that abortive treatment of syphilis may be fraught with considerable danger when the patient is already tuberculous. The tuberculosis may be whipped up by the specific treatment of the syphilis, in some cases, while in others no effect is apparent. The combination of arsphenamin and mercury may upset the balance of antibody production. Special caution is necessary with an inherited taint. He advises extreme caution, bearing in mind that the syphilis is more amenable to treatment later than the tuberculosis, if the latter is roused to a progressive course, and also that the syphilis in itself does not have such an injurious influence on the tuberculosis as the means taken to abort it.

Policlinico, Rome

Feb. 2, 1920, **27**, No. 5

Inaugural Lecture of Dermatology Course. A. Ducrey.—p. 127.
Conc'n in No. 6, p. 160.
*Ficai Corpuscles in Typhus. G. Ficai.—p. 133.
*Edema of the Larynx in the Pregnant. S. Pusateri.—p. 135.
Prophylaxis of Endemic Goiter. G. Cavina.—p. 137.

Special Corpuscles in Typhus.—Ficai reports finding in infected lice and in the brain of persons who had died at the height of typhus, numerous corpuscles of a diameter of 2 or 3 microns in the capillaries, but larger ones, round or oval, were found both in and outside of the large nerve cells of the cortex and of the nuclei of the base. Nothing resembling these corpuscles could be found in diseases other than typhus in his research.

Edema of the Larynx in the Pregnant.—Pusateri reports the case of a healthy woman of 30, with two healthy children, nearly at term with her third pregnancy. She had been exposed to scarlet fever, and suddenly developed acute edema of the larynx. Repeated attempts at intubation failed, while tracheotomy and means to hasten delivery were opposed by the family until the second day, by which time the fetus had died, and tracheotomy had to be done as a last resort. The woman died in coma in a few hours. The case teaches the necessity for prompt intervention with acute edema of the larynx in the pregnant; even intubation is liable to prove ineffectual. The danger to the fetus from the lack of oxygen, etc., justifies prompt artificial delivery. This not only saves the fetus but may have a favorable influence on the mother by the loss of blood and the rapid oxygenation of her blood. The pressure on the diaphragm from the pushing up of the viscera by the enlarged uterus hampers the functioning of the respiratory organs, and aggravates conditions from the acute edema.

Feb. 9, 1920, **27**, No. 6

The Controlateral Achilles Tendon Reflex. A. Giannelli.—p. 159.
*Spina Bifida in Adults. F. Fermi.—p. 166.

Spina Bifida in Adults.—Fermi recently encountered three cases of spina bifida in young persons of about 17. In one the deformity had spontaneously corrected itself almost completely. Notwithstanding the favorable history in these cases, he still proclaims the advantage of early operative intervention to ward off serious mishaps.

January, 1920, **37**, Medical Section, No. 1

*The Future of Medicine. A. Murri.—p. 1.
*Reproduction of the Malaria Parasite. T. Pontano.—p. 36.

The Future of Medicine.—Murri takes thirty-five pages to reply to Mackenzie's recent book with this title, which was reviewed in THE JOURNAL, Feb. 7, 1920, p. 415. He regards as extremely important Mackenzie's insistence that the future of medicine rests with the general practitioner; but he declares that Mackenzie goes too far in his effort to "simplify." To simplify too much is to retrogress. Murri also quotes from his own writings of thirty-three years ago describing what he called paralysis of the auricle, which has been recently rediscovered and entitled auricular fibrillation. Murri thinks that the practitioner will get a much better idea of the condition when it is called paralysis of the auricle than from the term fibrillation. He protests further against Mackenzie's assertion that there is always pain with incipient disease, citing a number of conditions, such as when albuminuria is casually discovered, in which there are absolutely no subjective symptoms.

Reproduction of Macrogametes of Plasmodium Vivax in the Blood Stream.—Pontano presents evidence of this occurrence in a case described, with a colored plate showing the gametes of *Plasmodium vivax* in different phases of reproduction, and says that even one positive observation outweighs a thousand negative findings. The attack of malaria was the first relapse after a latent interval of nearly five years.

Riforma Medica, Naples

Jan. 3, 1920, **36**, No. 1

Cultivation of the Gonococcus in Gelatin with Beer Yeast. L. Morini.—p. 2.
*Collateral Physical Signs of Central Pneumonia. C. Sofrè.—p. 3.
Artificial Pneumothorax in Treatment of Wounds of the Chest and Lung. E. Santoro.—p. 5.
Treatment of Latent Malaria. A. Jona.—p. 12.
*Protein Reaction and Fever. G. Galeotti.—p. 13.

Central Pneumonia.—Sofrè relates that he has sometimes had patients with high fever for several days, the face red, occasionally slight coughing, but none of the usual signs of pneumonia or of any other pulmonary disease could be detected. The course of the case, the increase in the cough, the progressively abundant expectoration, and the drop in the fever by crisis all testified to the correctness of the diagnosis of pneumonia and its central location. The extra resonance and the weakness of the vesicular murmur are restricted to one zone of the lung, usually corresponding to a single lobe, but there is nothing otherwise in the history to suggest emphysema.

Fever and Protein Intoxication.—Galeotti recalls that any heterogenous protein introduced parenterally in man or animals induces fever. On the other hand, in experiments on animals and in spontaneous fever in man, the fever every time could be traced to the presence in the organism of heterogenous or denatured or disintegrated, dead protein. Even exogenous poisons, he continues, never induce fever unless they modify the protein metabolism. Fevers can thus all be explained by this conception of protein intoxication. The heterogenous protein molecules can not be adsorbed, and they are thus unutilized, and they hamper the functioning of the cellular protoplasm. They may even exert a destructive action as they cling to the cells. This toxic action persists until by advanced hydrolysis the protein substances lose their colloid structure and become simple molecules (polypeptids and amino acids).

Jan. 24, 1920, **36**, No. 4

*Benzol in Treatment of Leukemia. F. Ravenna.—p. 86.
*Signs of Hyperthyroidism in Early Diagnosis of Pulmonary Tuberculosis. A. Gallotti.—p. 88.
*Pressure in the Brain as Element in Cerebral Hemorrhage. G. Paoletti.—p. 92.
*Electropuncture of the Spine in Tabes. F. Piccinino.—p. 94.
Lethargic Encephalitis. A. Montefusco.—p. 96.
Functions of the Optic Thalamus. A. Jappelli.—p. 97.

Benzol in Leukemia.—Ravenna reports three cases of chronic myeloid leukemia in which benzol treatment was systematically applied. They show that extreme caution is necessary with it, and that the effect is purely symptomatic. The symptoms inevitably return, sooner or later, and in a graver form, against which we are disarmed. In the favorable cases, under benzol the drop in the number of leukocytes is proportionately greater, in the immature forms; more uric acid is eliminated and the leukopenia continues to progress after suspension of the drug. In one of his cases the leukocytes numbered 234,000 in the obese woman of 57. Under 80 drops of benzol daily, the number dropped to 8,800. After a few months of substitution of Fowler's solution for the benzol, the leukocytes ran up to 43,000 but were again brought down to 11,000 under benzol. Nine months later they again ran up but subsided again under two months of 80 drops of benzol daily. A year later the number was 11,000. After another year or two the leukocyte count was found to be 265,000, and the number then was not modified by benzol, but was brought down to 22,000 with two months of roentgen exposures, 3 H units at a sitting, and the general health improved. Necropsy in the two other cases failed to show any injury from the benzol, or special accumulation of leukocytes in any organ. One patient was a man of 35; roentgen treatment brought the leukocytes down from 400,000 to almost normal. After a few months the symptoms flared up again and vigorous benzol treatment induced only transient improvement, the man dying the fifteenth day of the acute exacerbation.

Signs of Hyperthyroidism in Early Diagnosis of Pulmonary Tuberculosis.—Gallotti describes six cases in which toxic action from the insidious tuberculosis induced a more or less complete hyperthyroid picture. The goiter was treated with electricity, and tonics were given. The results indicated that treatment of the thyroid in such cases is liable to have a favorable influence on the pulmonary tuberculosis. He has encountered so many cases of this combination that he now suspects pulmonary tuberculosis in every case of exophthalmic goiter until this can be excluded. His experience indicates further that enlargement of the thyroid seems to imprint a benign character on the tuberculosis.

Prophylaxis of Cerebral Hemorrhage.—Paoletti queries why hemorrhage in the elderly occurs only in the cerebral vessels and not in the vessels of the abdomen or limbs. It seems as if there must be some special condition in the brain which favors rupture of vessels. The condition peculiar to the brain is that the vessels are subjected to a constant pressure from the cerebral fluid, although the intensity of this pressure may fluctuate. It is possible, he suggests, that when this pressure is less than usual, the vessel walls stretch as they are released from the usual pressure, and, as they stretch, they rupture. This assumption of hemorrhage *ex vacuo* not only explains all the facts observed, but suggests that when symptoms indicate impending cerebral hemorrhage or minute extravasation has already occurred, intraspinal injection of a little artificial serum might restore the normal intracerebral pressure, and thus ward off future injury from this source. He thinks that at least it is worth a trial in institutions for the aged, in treatment and in prevention of apoplexy.

Electropuncture of the Spine in Tabes, etc.—Piccinino has found vigorous revulsion applied to the spine effectual in treatment of tabes, often curing the ataxia or other disturbances. He prefers for the purpose a needle connected with the negative pole. This induces an electrolytic action deep in the tissues, but strictly localized. The positive electrode is placed on the spine above or below, with continuous current from pile or battery, connected with street lighting current, with galvanometer and rheostat. In cases rebellious to courses of mercury, this electropuncture at the points most diseased seems to attract the drug to these points, and clinical improvement results. The negative pole branches and

this can be connected with two needles; one is inserted to a depth of 1, 2 or more cm. and a current of 10 or 15 milliamperes is turned on. The electrolysis causes bubbles of gas around the needle; when this occurs, the second needle is introduced and the first withdrawn. This avoids sudden shocks, and in this way from fifty to 100 punctures can be made at a single ten or fifteen minute sitting, under a local anesthetic and epinephrin. This method of intrapolar catalysis, he says, is applicable to any form of meningomyelitis, especially those with spastic phenomena.

Brazil-Medico, Rio de Janeiro

Jan. 3, 1920, **34**, No. 1

Black Tongue in Influenza. M. Couto.—p. 1.
*Hyperplasia of Lymph Glands in Abdominal Pathology. C. Bourroul and Z. do Amaral.—p. 1.
Single Giant Middle Finger. A. Ferreira de Magalhães.—p. 3.
Amyl Nitrite in Treatment of Hemoptysis. Misservy.—p. 5.

Hyperplasia of Abdominal Lymph Glands.—Bourroul and do Amaral report the case of a boy of 9 who suddenly developed intense pains in the abdomen. An exploratory laparotomy the fifth day revealed merely enlargement of lymph glands, simple hyperplasia. The mesentery was studded with these enlarged glands, some as large as a pigeon's egg, compressing the bowel at different points. After the exploratory laparotomy, the pains gradually subsided and disappeared completely by the end of the second week. The boy had been given iodid, epinephrin, atropin and a single injection of arsphenamin. No attempt was made to remove any of the glands as sarcomatosis was assumed. Only microscopic examination of an excised scrap revealed the benign and curable nature of the lymphatism. The authors cite in connection with this case Symmers and Greenberg's study of lymphoid hyperplasia in the appendix, The Journal, Feb. 15, 1919, p. 468.

Jan. 10, 1920, **34**, No. 2

Commencement Address. A. Peixoto.—p. 17.

Jan. 17, 1920, **34**, No. 3

Case of Pellagra. F. I. da Silva.—p. 34.

Jan. 24, 1920, **34**, No. 4

Certain Drugs Used in Dermatology. F. Terra.—p. 49.
*Leprosy in Pernambuco. A. Rocha.—p. 52.

Leprosy in Pernambuco.—Rocha states that the asylum for lepers founded in his district in 1786, and still efficiently functioning, has aided materially in keeping the number of cases of leprosy at a low figure. There are now forty-seven men and thirty-six women inmates. Segregation is not compulsory.

Gaceta Médica de Caracas

Nov. 15, 1919, **26**, No. 21

Fever Should be Combatted. A. Machado.—p. 223.

Dec. 15, 1919, **26**, No. 23

*Typhoid in a Syphilitic. D. Lobo.—p. 247.
Fracture of Carpal Scaphoid Bone. Idem.—p. 249.
Experiences with Local Anesthesia in Venezuela. E. Alamo Gutiérrez.—p. 250.

Typhoid in a Syphilitic.—Lobo relates that the typhoid in the young man did not seem to be modified by the various measures applied. The fever kept running up at times, and ulcerations developed in the tonsil, neck, arms and elsewhere. The Wassermann reaction was negative, but under tentative treatment for syphilis the disease took a turn for the better at once.

Dec. 31, 1919, **26**, No. 24

*Treatment of and by Fever. F. A. Risquez and others.—p. 259.
Cyclic Vomiting. Villegas Ruiz and others.—p. 263.

Treatment of Fever and Treatment by Fever.—Risquez reviews the arguments in favor of the assumption that the fever is a useful defensive reaction, Machado in a previous article having presented the other side. Villegas gages the fever and the necessity for intervention by the amount of elimination of metabolic products through the kidneys. He does not expect baths and packs to reduce the temperature directly, but only by aiding in the elimination of waste and soothing the heat centers.

Revista del Instituto Bacteriológico, Buenos Aires

October, 1919, **2**, No. 3

*Enzootic Meningo-Encephalitis. R. Kraus, L. Kantor and R. Quiroga.—p. 239.
*Heterogenous Antibodies. III. A. Sordelli and C. E. Pico.—p. 261.
*Heterogenous Antigens. R. Wernicke and A. Sordelli.—p. 281.
*Mixed Tumor on Rat. A. H. Roffo.—p. 283.
*Vaccine Treatment of Whooping Cough. J. L. Parera.—p. 285; Idem. J. Bacigalupo.—p. 291.
Mosquito Host of Malaria Found in Buenos Aires. J. Petrocchi.—p. 295.
*Biologic Tests for Kinship between Species of Animals. G. Fischer and L. Kantor.—p. 303.
*Endemic Goiter and Cretinism in Argentina. R. Kraus.—p. 309; Idem. R. Wernicke.—p. 325.

Encephalitis in Horses.—Kraus and his co-workers cultivated a diplococcus from the lesions of the brain in the contagious enzootic which for several years has been affecting horses in Argentina. The symptoms are explained by the infiltration of the cerebral vessels, and the presence of the diplococcus with which they were able to reproduce the disease in rabbits and in horses. Over twenty large photomicrographs accompany the article and seven illustrations of animals with the disease. It was first observed, they say, at Borna, near Leipzig, in 1894, and is usually called Borna disease.

Heterogenous Antibodies.—Sordelli and Pico found that when a hemolysin for sheep or goat corpuscles was added to a suspension in physiologic saline solution of an alcoholic extract of guinea-pig kidney tissue, in a few hours agglutination and precipitation occurred and the fluid became clear. They experimented with other lipoids and antigens, and explain the phenomenon as a reaction between an antibody and a heterogenous antigen. It does not occur in the absence of sodium chlorid.

Heterogenous Antigens.—Wernicke and Sordelli state that light is thrown on the nature of heterogenous antigens by their success in isolating a substance (containing nitrogen and phosphorus, with the property of fixation of heterogenous hemolysins), from an alcoholic extract of horse kidney tissue treated with acetone, ether and benzol.

Mixed Tumor in Rat.—Roffo gives eleven photomicrographs of a spontaneous carcinosarcoma found in an old white rat.

Vaccine Treatment of Whooping Cough.—The vaccine is made from sputum, and the impressions from this treatment were quite favorable, although Bacigalupo reports over 12 per cent. unmodified by it in his 495 cases.

Biologic Tests Show Kinship Between Species.—Fischer and Kantor found it impossible to induce anaphylaxis in various members of the cavy family. This negative response sustains their biologic kinship. They found further a similar analogous response to inoculation of transplantable guinea-pig lymphosarcomas, and also to the response to precipitin tests. The animals investigated were the guinea-pig and the cuis or *Cavia pallas*. The article is illustrated.

Endemic Goiter in Argentina.—Kraus states that no statistics have been compiled in regard to the prevalence, etc., of goiter and cretinism in Argentina, but that both are known to occur in the mountainous regions of the country while the Buenos Aires and Córdoba districts seem to be free from goiter. The insect host of Chagas' disease is prevalent, and it has been found at various points to be infected with the trypanosome, *T. cruzi*, which induces Chagas' parasitic thyroiditis. But Kraus does not know of any instance of Chagas' disease in Argentina, the endemic goiter and cretinism having apparently no connection with the trypanosome. The acute form of Chagas' disease as observed in Brazil is characterized by the thyroiditis and the presence of the trypanosome in the blood. The chronic forms may be confounded with endemic goiter and cretinism; the differential diagnosis is difficult in mountainous districts. It is possible that this South American trypanosomiasis is a superinfection of endemic goiter and cretinism. He urges research in this line to determine whether Chagas' disease is common in mountainous districts in Brazil where endemic goiter and cretinism abound, while it is absent from the plains—as in the Argentina flat country—notwithstanding the presence of

the infected insect host. Some of the illustrations show groups of cretins in the mountain districts and cretin dogs.

Endemic Goiter and Cretinism in Argentina.—Wernicke relates that the localities where goiter is endemic in Argentina have soil and waters that differ completely from those which Bircher incriminated in Switzerland as responsible for endemic goiter.

Berliner klinische Wochenschrift, Berlin

Dec. 1, 1919, **56**, No. 48

*Renal Calculi Following Spinal Injuries. E. Holländer.—p. 1129.
*Scarlet Fever. G. Zuelzer.—p. 1131.
Leukocyte Count in Malaria. M. Stoss.—p. 1135.
Body Heat in Relation to Work. J. Fischer.—p. 1137.
Prevention of Infant Mortality. F. Lenz.—p. 1139.

Causes Producing Renal Calculi Following Injuries to the Spinal Column.—Holländer gives an elaborate and detailed explanation of the phenomenon to which Kurt Müller called attention in 1895, namely, that following certain injuries to the spinal cord, there is frequently a rapid and bilateral formation of calculi in the renal pelvis. He ascribes the condition to the paralysis of the renal pelvis and the ureter, resulting directly from the injury to the spinal column.

Early Diagnosis of Scarlet Fever.—Zuelzer endeavors to show that scarlet fever is recognizable in the incubation stage several days before the onset of the fever. He ventures in explanation of the maximal enlargement of spleen and liver at the onset of the fever in scarlatina, typhus and malaria the hypothesis that the causative agent attacks these organs first. He has found quinin treatment of scarlet fever efficacious in the early stages, and has effected cures by its use. As it is doubtless true that the disease is spread during the incubation stage, this constitutes an added reason for its early recognition. As a prophylactic measure he recommends that in every case of infectious sore throat large doses of quinin should be prescribed. If scarlet fever is not present, no harm is done; in fact, Fraenkel recommends quinin as the most rational treatment for angina. In Prussia the case mortality from scarlet fever before the war was 10 per cent. He states that percussion of the liver is facilitated by a deep inhalation, distending the abdomen.

Dec. 8, 1919, **56**, No. 49

Reforms in Medical Education. B. Fischer.—p. 1153.
*Genesis of Blackwater Fever. T. Zlocisti.—p. 1157.
*Hemolysis with Urine in Chronic Nephritis. L. Neufeld.—p. 1159.
*Potassium Permanganate Treatment of Smallpox. W. Bender.—p. 1160.
Value of Liquor Carbonis Detergens. Herxheimer and Altmann.—p. 1162.

Pathogenesis of Blackwater Fever.—Zlocisti expresses doubt whether on the basis of the known material a uniform genesis for all cases of blackwater fever can be established. He endeavors to show that the theory that blackwater fever is due to the harmful effects of quinin administration is untenable, by citing a special case in which grave hemoglobinuria developed when no quinin was being taken and it subsided under large doses of quinin.

Hemolytic Phenomenon of Urine in Chronic Nephritis.—Neufeld calls attention to a peculiar phenomenon occurring in a case of severe nephritis as revealed in the serologic examination of the urine of a series of syphilitics. The volume of albumin in the urine of the patient in question was 0.7 per cent. The Wassermann reaction in the blood was strongly positive; in the urine, absolutely negative. This negative urine reaction as opposed to the strongly positive blood finding contradicts, he thinks, the usual serologic findings in other body fluids containing albumin. Investigation revealed the fact that the urine contained a very active hemotoxic substance, laking sheep blood and beef blood but not human, guinea-pig or rabbit blood. He found further that this hemotoxic substance seems to have nothing to do with syphilis but is often found with severe nephritis, especially in cases with manifestations of uremia. The hemolytic substance is not destroyed by boiling. It seems to occur proportionately to the albumin content of the urine.

Potassium Permanganate in Treatment of Smallpox.—Bender condemns red light therapy and endorses the potassium permanganate treatment of smallpox as effective in dealing with the dermatologic aspects of the disease. The convalescent stage is much shortened on account of the accelerated desquamation process, especially if the peeling of the palms of the hands and the soles of the feet is aided by mechanical removal. The isolation period is reduced, which lessens the number of melancholy states and hysterical attacks. Dreyer has the face, arms and hands painted with a saturated aqueous solution of potassium permanganate three or four times a day for the first two days and then the entire body once a day. This stains the skin brown and thus realizes a kind of colored light therapy, he says, besides its other advantages. Bender found it impossible to apply the solution so often or in such concentration, as it caused smarting, but by diluting it and applying it to part of the body at a time, he obtained excellent results in his eight cases.

Deutsche medizinische Wochenschrift, Berlin

Dec. 4, 1919, **45**, No. 49

Alimentary Factors Influencing the Blood in Children. L. F. Meyer and A. Japha.—p. 1345.
Dermoids of the Neck. H. Wendriner.—p. 1355.
Secondary Covering of Wounds with Skin. H. Walther.—p. 1356.
Silver Salvarsan in Treatment of Syphilis. Fabry.—p. 1358.
Tuberculin Treatment of Tuberculous Pleurisy with Effusion. C. Stuhl.—p. 1360.
The Friedmann Tuberculosis Treatment. Lydia Rabinowitsch.—p. 1362.
What Is Hypnosis? M. Levy-Suhl.—p. 1363.
Effect of Methylene Blue in Malaria. P. Kaufmann.—p. 1365.
Production of Artificial Râles for Teaching Purposes. W. Hildebrandt.—p. 1365.

Münchener medizinische Wochenschrift, Munich

Dec. 5, 1919, **66**, No. 49. F. Penzoldt Number

*Variable Virulence of Tubercle Bacilli. G. Hauser.—p. 1398.
Paratyphoid Colonies. L. Heim.—p. 1399.
*Significance of Sarcinae in the Stomach. Gerhardt.—p. 1400.
*Pulmonary Syphilis. G. Schröder.—p. 1401.
Protein Therapy. A. Schittenhelm.—p. 1403.
Roentgen Therapy in Pulmonary Tuberculosis. O. de la Camp.—p. 1405.
Psychogenic Disturbances During the War Period. G. Specht.—p. 1406.
Studies on the Thorax. E. Zeltner.—p. 1407.
*Neuroses of the Diaphragm. F. Jamin.—p. 1408.
*Intermittent Therapy: I. Value of Intervals. H. Königer.—p. 1410.
Protein Substances Found Within Bacterial Cells, and Chemical Composition of Bacterial Cell-Membranes. E. Toenniessen.—p. 1412.
Value of the Sachs-Georgi Reaction. L. Hauck.—p. 1413.
Treatment of Acute Appendicitis. Hagen.—p. 1414.
*Petruschky Treatment of Surgical Tuberculosis. Heubach.—p. 1415.
Prophylactic Vasectomy in Tuberculosis of the Sexual Organs. E. Pflaumer.—p. 1415.
Pathologic Anatomy of Typhoid Occurring in the Army. H. Merkel.—p. 1416.
Surgical Aspects of Chronic Gastric and Duodenal Ulcer. F. Doederlein.—p. 1420.
*Infants Born during War Period. Jahreiss.—p. 1421.
Cadaveric Odor of Breath as Sign of Impending Death. O. Rüdel.—p. 1422.
*Acute Participation of Ovary in Epidemic Parotitis. Ruge.—p. 1422.
Echinococcus Cyst in Liver Simulating Gallstones and Pleural Empyema. Reismann.—p. 1423.
*Pityriasis Rosea and Trichophytosis. Fried.—p. 1423.

Variable Virulence of Tubercle Bacillus Infections.—Hauser reports as the result of animal experimentation that the virulence of the human type of tubercle bacillus found in various cases of tuberculosis in man varies between very wide limits. Strains of weak virulence after repeated introduction in the eye of a rabbit regain the average virulence for a rabbit's eye. In acute miliary tuberculosis the virulence of the tubercle bacillus may be unusually low.

Diagnostic Significance of Sarcinae in the Stomach.—Gerhardt states that it has been his experience that sarcinae in the stomach may always be taken as an indication of stasis, usually from organic pyloric stenosis, accompanied by considerable gastrectasia. In some cases the stasis was only temporary, caused partly by slight organic changes combined with reflex spastic closing of the pylorus, and partly the result of motor insufficiency due to acute gastritis. The amount of free hydrochloric acid present seemed to have no bearing on the colony of sarcinae.

Pulmonary Syphilis.—The fact that pulmonary syphilis is often overlooked clinically, and that it is so commonly mistaken for pulmonary tuberculosis has led Schröder to endea-

vor to clarify in some measure its clinical picture. The most important means of establishing a differential diagnosis is the roentgen ray. An exact anamnesis is important. Syphilitic changes in the upper respiratory passages and elsewhere should be looked for. The localization, or atypical seat, of the lung process is significant. Absence of tubercle bacilli should be weighed. A more protracted course than in tuberculosis should be noted.

Neuroses of the Diaphragm.—Jamin recalls that the diaphragm, owing to its position between voluntary and involuntary muscles and forming a partition between the abdomen and the thorax with its own sensory innervation, is not infrequently the seat of psychogenic sensory and motor disturbances, in which the thoracic and abdominal muscles are involved in various ways. The resulting neuroses may easily lead to diagnostic errors as to conditions in thoracic and abdominal organs, the functioning of which may in fact be thereby impaired. Early diagnosis and psychotherapeutic treatment of these neuroses are therefore essential. Systematic breathing exercises will exert a prophylactic influence, and, while valuable for all, they are especially indicated for young persons who are weakly and nervous.

Intermittent Therapy: Value of Intervals Without Treatment.—Köniğer thinks that too little attention has been paid in the past to the value of rest periods, or intervals without treatment, which his investigations and observations would lead him to regard as an integral part of therapy. The periods of suspension should be as carefully investigated as the choice of a remedy, its dosage and manner of administration.

Inunction Tuberculin Treatment of Surgical Tuberculosis.—Heubach states that he has been using the Petruschky method since April, 1918, in both hospital and private practice, having given this treatment in eighty cases of tuberculosis of the lymph glands, forty-five cases of tuberculosis of the bones and joints, and in five other isolated cases. More than 50 per cent. of the cases were grave, and only 5 per cent. were mild. In every case he was impressed with the favorable effect on the course of the disease. The usually intractable fistulas in tuberculosis of glands and joints, and the abscesses in vertebral tuberculosis healed after the second or third tuberculin inunction. In a few cases a second series of treatments following a four to eight week interval became necessary, but he seldom failed to secure the desired results. Many of the severe cases he would formerly have regarded as hopeless. Sufficient time has not elapsed to speak of the percentage of permanent cures. He considers the beneficial effect of the treatment to be indirect, in that it strengthens the natural resistance of the organism.

Infants Born During War Period.—Jahreiss considers the question as to how the development of the fetus is affected by the changed nutrition of the mother. The results of his investigations on children born in the Augsburg Maternity during 1918 and the first seven months of 1919 are to the effect that the children born during this period were perfectly normal in weight, length and size of head.

Acute Participation of the Ovary in Epidemic Parotitis.—Ruge reports an acute condition of the ovary which arose in the course of mumps. There were symptoms of internal hemorrhage which precluded a diagnosis of acute oophoritis and favored ovarian hematoma; or possibly a combination of the two. Five weeks after it was first discovered the ovary had returned to normal size.

Treatment of Pityriasis Rosea and Trichophytosis.—Fried recommends mercurial ointment for the treatment of pityriasis rosea and trichophytosis, as it effects a speedy cure and is cheaper and simpler than the roentgen ray.

Wiener klinische Wochenschrift, Vienna

Dec. 4, 1919, **32**, No. 49

*War in Relation to Hereditary Syphilis. K. Hochsinger.—p. 1173.
*Epinephrin in the Elderly. A. Arnstein and H. Schlesinger.—p. 1179.
Bradycardia: IV. L. Hess.—p. 1181.
*Lung Enlargement in Syphilis. A. Edelmann.—p. 1182.
Roentgen Diagnosis of Diseases of the Spleen and Liver. A. Henzelmann.—p. 1185.
Quinin in Childbirth. L. Knapp.—p. 1185.
Traumatic Purpura. R. Gruss.—p. 1185.
*By-Effects with Smallpox Vaccination. K. Wagner.—p. 1186.

War in Relation to Hereditary Syphilis.—Hochsinger, basing his opinion on investigations applied to 123,284 births in Vienna, reaches the conclusion that syphilis among the newborn and infants decreased during the war period.

Unusual Effects of Epinephrin in the Elderly.—Arnstein and Schlesinger record that sometimes, following subcutaneous administration of epinephrin in elderly patients, the blood pressure drops, either with or without a preceding brief rise. In many cases this is associated with cardiac weakness, in which case tachycardia commonly results. Or the response may be bradycardia for several hours, often without accompanying decrease of blood pressure.

Lung Enlargement in Syphilis.—Edelmann reports on the basis of extensive investigations that tertiary syphilis may lead to lung changes in the nature of lung enlargement and emphysema. This finding, he thinks, serves to throw light on a certain proportion of the cases of so-called idiopathic emphysema occurring in middle life.

Observations on Smallpox Vaccination.—Wagner reports some peculiar phenomena following vaccination for smallpox in a woman of 36, who, with the exception of hay-fever, from which she had suffered since she was 14 years old, was perfectly healthy. She had been vaccinated two years previously without success. Following revaccination in July, 1919, with the appearance of the pustule, doughy swelling of the skin developed over the whole surface of the body. The patient was unusually pale and listless. Temperature ranged between 37.5 and 38.8. Marked dyspnea was present and the pulse was slow and tense. Respiration was asthmatic. The tonsils were somewhat enlarged and covered with grayish-white spots. The liver was enlarged. Specific gravity of urine was from 1.009 to 1.018. The albumin content was 0.05 per cent. and remained at this level for several days. There were no casts and no red blood cells, but renal epithelial cells were present in considerable numbers. The affected arm was red and swollen. These inflammatory phenomena disappeared in a few days without treatment. Wagner raises the question whether the hay-fever could have been in any way connected with the phenomena. Sore throat was observed in five other cases of the series of thirty and accompanied by a still higher fever (up to 40.2 C.). The sore throat yielded readily to local treatment. Sore throat was not epidemic at the time, nor were the weather conditions such as to favor its development. During this same period of vaccination, cases of severe illness and even fatalities following vaccination were reported from other sources.

Zeitschrift für Tuberkulose, Berlin

February, 1920, **31**, No. 6

*Treatment of Pulmonary Tuberculosis in Sanatoriums and in the Home. F. Köhler.—p. 321.
Induced Right Pneumothorax with Left Pleurisy with Effusion. E. Als.—p. 333.
*The Tuberculous Psychoneurosis. G. Ichok.—p. 334.
Repose versus Occupation in Treatment of Pulmonary Tuberculosis. H. Hayek.—p. 350; Idem. H. Maendl.—p. 352.

Treatment of Pulmonary Tuberculosis.—Köhler declares that sanatorium measures are often applied too arbitrarily. The patients may actually suffer from cold, when reclining or sleeping out of doors. "The exposure of the décolleté gowns of the present day may be extremely harmful for anemic and tuberculous girls and women. . . . Toughening procedures have their day before 35 for the healthy, but after this the aim should be to spare the organism, and chief among the measures for this purpose is a proper supply of warmth. This is particularly necessary for persons with poor blood, the tuberculous, the nervous, the rheumatic, and those with disease of the kidneys or sexual organs."

The Tuberculous Psychoneurosis.—Ichok insists that the tuberculous psychoneurosis is a characteristic syndrome which requires individual treatment and is of general social importance. Pronounced psychoses are rare in the tuber-

culous, but this psychoneurosis is extremely common. Toxic action from the tuberculosis toxins cannot be alone responsible, as the psychoneurosis does not necessarily become more severe as the intoxication progresses, while, on the other hand, the psychoneurosis may develop complete even with the mildest forms of the disease. Ichok ascribes it mainly to a subconscious sense of organic inferiority (*organminderwertigkeit*). The source of the psychoneurosis should be sought, possibly by psychanalysis, to enable the patient to divert his mental processes into useful channels.

Zentralblatt für Chirurgie, Leipzig

Feb. 14, 1920, **47**, No. 7

The Mechanics of Concussion of the Brain. H. Rahm.—p. 146.
*Volvulus of the Sigmoid Flexure. C. Pochhammer.—p. 148.
Suture for Abdominal Wall. H. Hans.—p. 149.
Closing an Artificial Anus. J. Kinscherf.—p. 151.

Anastomosis for Volvulus of the Sigmoid Flexure.—Pochhammer sutures together, side to side, the lowest parts of the loop that he has just untwisted. The anastomosis opening must be 6 or 8 cm. long, to allow free passage of the contents. The loop above is thus functionally excluded, and it finally nearly shrivels away. He has thus treated four patients with volvulus of the sigmoid flexure in the last two years. Other technics expose to danger of recurrence, while with this method recurrence is impossible.

Feb. 21, 1920, **47**, No. 8

*Habitual Dislocation of the Patella. G. Marwedel.—p. 170.
*Postoperative Tetany. W. Haas.—p. 171.
*Operation for Undescended Testicle. P. Frangenheim.—p. 173.
Orchidopexy plus Funiculopexy for Testicle Retained in Inguinal Canal. E. Glass.—p. 174.

Habitual Dislocation of Patella.—Marwedel says that he knows of fifty different methods for correction, but that the technic he describes here is superior to all others. He slits the capsule and laps the lips in a special way as he shows in his illustrations.

Cure of Postoperative Tetany.—Haas was able to cure the tetany and bring it on again at will in a severe case by administering beef parathyroid tablets. In a short time the patient's own parathyroids had recuperated; they had only been damaged, not removed, at the goiter operation. Haas adds that in resecting the thyroid in a woman seven months pregnant, he found the parathyroids three or four times their normal size, and regards this as a hint to give parathyroid treatment to pregnant women showing signs of parathyroid insufficiency, and to keep it up until far into lactation. Or grafting of parathyroids might be considered. There is no theoretical ground for giving thyroid treatment alone in tetany; the thyroid may actually annul any action from the parathyroids.

Simplified Operation for Undescended Testicle.—When Frangenheim finds it difficult to bring the testicle down to its proper place, he lengthens the spermatic cord by shifting its position to back of the epigastric vessels, thus shortening its course without injury to the elements of the cord. The testicle is easily drawn through behind the inferior epigastric artery and vein, as he explains with an illustration. The procedure is much facilitated by raising the pelvis quite high. He has applied it successfully in ten cases.

Zentralblatt für Gynäkologie, Leipzig

Feb. 21, 1920, **44**, No. 8

The Corpus Luteum in Relation to Menstruation. A. Labhardt.—p. 185.
*Operative Treatment of Incontinence of Urine. A. H. M. J. van Rooy (Haarlem).—p. 192.
*Endemic Diphtheria in Maternities. E. Hollatz.—p. 195.

Operation for Incontinence of Urine.—Van Rooy applied the Goebell-Stoeckel technic in a case of incontinence of urine that had resisted all treatment for sixteen years. It had followed forcible removal of a calculus from the bladder. A flap of muscle was brought down to each side of the neck of the bladder, working through a transverse incision above the symphysis. Then, through an incision in the vagina, the ends of the muscle flaps were sutured together around the neck of the bladder to make a new sphincter, as it were. Eight months have passed since the operation, and there has not been a trace of incontinence since. The patient, an unmarried woman of 36, urinates only every three and a half or four hours. The muscle loop draws the neck of the bladder upward, and this partially kinks it. The pyramidalis was the muscle used to reenforce the sphincter.

Endemic Diphtheria Among the Newly Born.—Hollatz states that since 1910 thirteen reports have been published of endemics of diphtheria among the newly born. In nearly all the cases the nose was the seat of the process.

Feb. 28, 1920, **44**, No. 9

*Injection of Fluid into the Placenta. B. Schwarz.—p. 217.
Isolated Compression of Abdominal Aorta. J. Suerken.—p. 223.
Amniogenous Deformities. C. v. Goetzen.—p. 225.

Hydraulic Turgidization of the Placenta.—Schwarz extols Gabaston's method of injecting a fluid into the placenta as a simple and harmless means to arrest hemorrhage and aid in the spontaneous separation of the placenta. He has applied it in sixteen cases. As the placenta swells from the injected fluid, the effect in detaching it from the uterus wall is the same as when the uterus wall contracts under the placenta, while the distention of the placenta stimulates the uterus to contract, and its heavier weight exerts greater traction. A still further advantage is that the turgidized placenta offers a better hold for the hand in case continuance of the hemorrhage demands Credé expression. The saline is injected through the umbilical cord vein until some resistance is felt; usually 300 or 400 c.c. are enough. It never seemed to do any harm in his cases. (Gabaston's original communication on this hydraulic method of aiding in detaching the placenta was summarized in THE JOURNAL May 2, 1914, p. 1443.)

Mededeel. uit het Geneesk. Lab. te Weltevreden, Java

1919, No. 4

*Immunity of Common Fowls to Plague. P. C. Flu.—p. 116.

Immunity of Fowls to Plague.—Flu inoculated ten hens or cocks with a fraction of or one or two loops or a whole slant culture of plague bacilli of a strain which killed guinea-pigs in a 1:10,000 loop dose injected subcutaneously. The fowls were inoculated by the vein, subcutaneously or intramuscularly, but none showed signs of sickness, phagocytosis always insuring the prompt disappearance of the plague bacilli. They retained their virulence to the last, up to four days, but all seemed to act merely as foreign bodies, and were incorporated by the phagocytes. Domestic fowls, he states, have a temperature of 42 C., and he regards this as significant, as he, Kolle and Strong have noted that the plague bacilli rapidly decrease in virulence when cultivated at a temperature as high as 40 to 42 C.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 10, 1920, **1**, No. 2

*The Fight Against Venereal Disease. T. M. van Leeuwen.—p. 112.
*Shape of the Stomach. E. H. van Lier.—p. 119.
*Whooping Cough. W. F. Enklaar.—p. 126.
Wassenaar's Visual Phenomenon. S. J. R. de Monchy.—p. 129.
*Treatment of Lupus. P. J. Mink.—p. 130.

The Campaign Against Venereal Disease.—Van Leeuwen reiterates that the efforts to deprive venereal diseases of their endemic character require the personal cooperation of medical men. It would result in incalculable advantage if all would keep a record of every case, especially of syphilis, and record the effect of the disease on the patient and on his family as the years pass. He appeals to physicians in general to aid in this and in other ways the organized efforts to repress the spread of these diseases.

The Shape of the Normal Stomach.—Van Lier compares the conflicting statements of various authors as to the shape of the normal stomach, saying that the shadow cast when the stomach is weighed down with a suspension of bismuth cannot be accepted as the normal finding. Even the necropsy findings do not represent the physiologic stomach; the rigor mortis, the gases that may form in half an hour after death,

and other factors distort the shape of the stomach. He gives roentgenograms of the dog stomach, after a fine rubber tube filled with a contrast suspension had been sutured to the outside of the stomach from the esophagus to the pylorus. The shadow of the fasting stomach shows the rubber tube crumpled up in a bunch, the fasting stomach having evidently contracted into small compass. With the heavy contrast meal, the stomach assumes a sac shape, with a tube shape at the pylorus end.

Prophylaxis of Whooping Cough.—Enklaar suggests that contagion of whooping cough and possibly of measles might be prevented by arranging the classes according as the children have had the disease or not. If a case develops in a school room, those who have had the disease can continue at school, but the susceptible should be kept at home until the danger of contagion is past.

Acid Treatment of Lupus.—Mink applied trichloracetic acid in a case of lupus refractory to light treatment, and was surprised at the prompt benefit.

Jan. 17, 1920, **1**, No. 3

*Prophylaxis of Venereal Disease. H. T. M. van Leeuwen.—p. 201.
*Functional Dyspepsia. C. G. Vervloet.—p. 207.
*Epidemiology of Cholera. C. S. Stokvis.—p. 216.
Contract Practice in Rural Districts. H. C. van den Bijllaardt.—p. 223.

Prophylaxis of Venereal Disease.—Van Leeuwen enumerates the reasons why he rejects as bound to prove ineffectual any official recommendations for individual prophylaxis among civilians. His five years' experience as secretary of the Netherlands Society for Combating Venereal Disease has convinced him that the best plan is for the authorities merely to enjoin abstention from extramarital intercourse in prevention of venereal disease, but to provide ample facilities for medical care at suitable hours and places for the infected, leaving it to the physician in charge to decide whether in a given case it is necessary or useful to apply local preventive measures. Van Leeuwen makes a point of always carefully instructing in the first signs and symptoms of venereal disease, and in the danger of infecting others during these six or eight weeks.

Functional Dyspepsia.—Vervloet remarks that the diarrheas from insufficiency of the digestive glands form the largest contingent of the cases of functional intestinal derangement. The glandular secretions may be deficient in quantity or quality. He found gastric achylia or hypochylia in 25 of 84 cases of fermentation diarrhea, and in 6 cases the pancreas also was functionally insufficient. Undigested starch and much cellulose in the stools should suggest investigation of the chemistry of the stomach, and in 30 per cent. some secretory anomaly then becomes evident, as a rule. Treatment to substitute the lacking gastric juice soon improves the diarrhea. Diarrhea from putrefaction processes or defective digestion of fats is seldom found with achylia, and the products are less irritating than the acids generated in the fermentation processes. He never saw a case in which the intestinal disturbances had preceded the hypochylia, but was able to trace the reverse sequence very plainly in two cases; the defective functioning of the secretory system of stomach and pancreas had preceded the colitis, with a catarrhal intestinal condition bridging the intermediate period. In 32 cases of diarrhea with gastric achylia or hypochylia there were only 8 in which there was distinct putrefaction; in the other 24 there was abnormal fermentation. The abnormal fermentation of carbohydrates and cellulose forms the link between the gastric achylia and the colitis. Perhaps investigation of other digestive ferments may throw further light on functional dyspepsia. In treatment, bed rest will often be found a valuable adjuvant. The findings in the stools should guide the diet.

Epidemiology of Cholera.—Stokvis insists that nowadays we pay too exclusive attention to bacteria, and overlook other circumstances that may have a causal or accessory significance. We should study epidemics by a "mass epidemiology" instead of by individual cases. Of course when the epidemic has once got a firm foothold, it is spread by contact, but this is inadequate to explain the earlier phases.

Hygiea, Stockholm

Feb. 29, 1920, **82**, No. 4

*Masks in Prevention of Contagious Disease. A. Josefson.—p. 113.

Masks in Prophylaxis of Contagious Disease.—Josefson had masks used by the nurses in his service almost from the beginning of the influenza epidemic, and states that none of the nurses in the influenza wards contracted the disease, as all scrupulously wore the masks. In the adjoining surgical ward, where masks were not worn, some of the nurses were down with the disease all the time. The wearing of masks with whooping cough, diphtheria, scarlet fever, mumps, etc., he observes, might arrest the spread of the infection. In conclusion, he warns that pregnant women should be protected with special care against influenza.

Ugeskrift for Læger, Copenhagen

Feb. 12, 1920, **82**, No. 7

*Roentgen Ray Diagnosis of Gout. Hans Jansen.—p. 217.
*Huge Cavities in Lungs. F. Tobiesen.—p. 221.
Lethargic Encephalitis. H. Jacobsen.—p. 227.
*Perirectal Carcinoma. L. Melchior.—p. 231.

Roentgen Ray Diagnosis of Gout.—Jansen's roentgenogram of the hand of a man of 47 showed callus-like masses of bone and destructive processes—the picture not fitting into the frame of any known disease except gout, and it was on an unprecedented scale for gout.

Large Cavities in Lungs.—Tobiesen reviews the necropsy findings in five of six cases of a large cavity in one lung, and compares them with six cases on record, all on the left side. In the majority, the huge cavity had been mistaken for pneumothorax. In one of his five cases the cavity was on the right side. In all, the entire lung or nearly the whole lung formed a cavity traversed by trabeculae which corresponded to the vessels.

Perirectal Carcinoma.—Melchior recalls that cancerous stenosis of the intestines practically always has been explained by a cancerous growth in the bowel mucosa or secondary fibrous bands. The conditions were different in three cadavers recently examined; the rectal mucosa was intact, and the stenosis was the result of a metastatic carcinomatous infiltration of the connective tissue around the rectum and encroaching on it. In one of the cases the conditions had compelled a laparotomy, and the patient, a previously healthy man of 55, died. The primary cancer was a very small neoplasm in the esophagus which had not caused any clinical symptoms at the time of death. The "periproctal cancer" and tendency to stenosis was a necropsy surprise in the second case—a woman of 33 with multiple metastases of a mammary cancer—and also in the third, a man of 68 with gastric cancer.

Feb. 19, 1920, **82**, No. 8

Strophanthin. Marie Krogh.—p. 249.
Progressive Lipodystrophy in Young Woman. J. Helweg.—p. 261.

March 4, 1920, **82**, No. 10

Acute Orbital Disease Originating in Nasal Sinuses. S. H. Mygind —p. 305. To be cont'd.
*Immunity to Influenza. H. C. Hall.—p. 317.
*Intestinal Contents of Mummies. J. W. S. Johnson.—p. 326.

Immunity After Influenza.—Hall states that at the Bispebjærg hospital among the 500 patients with influenza in four weeks early in 1920, 8.2 per cent. had had the disease during the 1918-1919 epidemic.

The Intestines of Mummies.—Johnsson relates that the mummies found in the excavations at Nagaed-der in Upper Egypt had not been embalmed. The intestines contained relics of grains and epithelial cells of a common plant, the trichodesma, which is a household remedy to this day in certain countries for intestinal irritations and catarrhal conditions of the air passages. He believes that the plant had been taken as a medicine because it was not found regularly among the eighty mummies, only in a few, and in three it was accompanied with mouse bones which are known to have been used medicinally by the ancients. The alkali of the bone powder was accompanied with scraps of cyperus and trichodesma. These mummies date from before the embalming period, more than 5,000 years B. C.